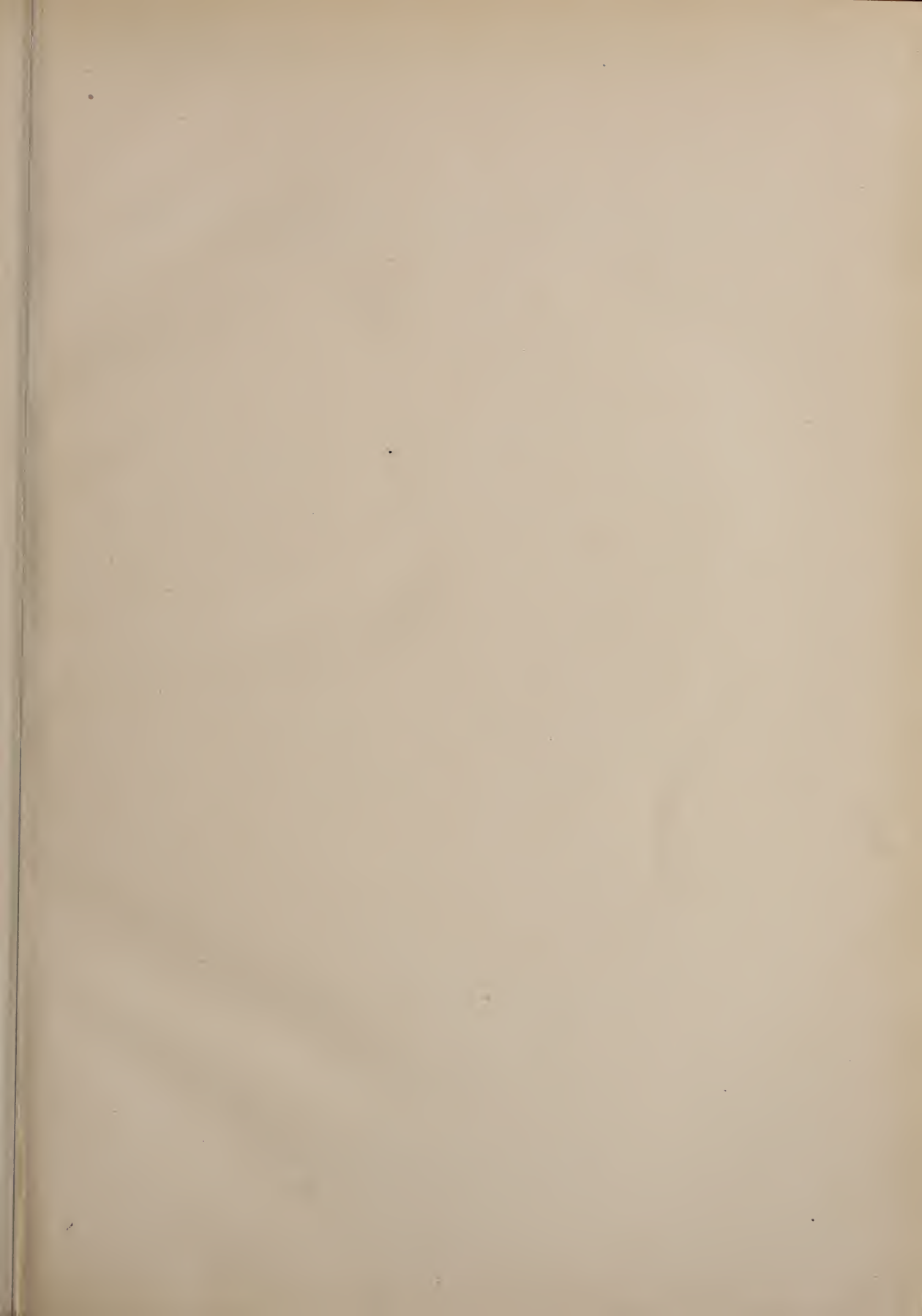


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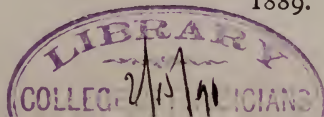
THE OFFICIAL ORGAN OF
THE STATE BOARD OF HEALTH
OF PENNSYLVANIA.

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VOLUME IV.

Abuse of Tobacco	517	Asphyxia from Gas	245
Adulteration of Food and Drugs, 376, 416, 457		Asses Milk for Infants	241, 288
Adulteration and Instinct	153	Athlete, A Sweet Young	613
Adulteration of Tea	601	Athletics at Swarthmore	197
Adulteration, Suppression of	35	Athletics at University of Pennsylvania .	190
Advice to Parents	615	Athletics of Cape May	195
Ages, Mortal	122	Athletics and Scholarship	294
Agnew, D. Hayes, Social Life and Sur- gical disease	105	Athletes and Chest Troubles	621
Air in Rooms	305	Atkinson, E., Art of Cooking	537
Air Rarefied	615	Atkinson, W. B., Epidemics Following Floods	347
Air Starvation	292	Atlee, W. F., Hair Mattresses	127
Alcohol, Prohibitive Duty on	565	Austen, P. T., Struggle for Existence .	448
Alcoholism, Hereditary	302	Babies, Great of 1809	514
Alexander, H. M., Proper Method for a Vaccine Propagation	394	Babies a Word for	356
Almshouse, Removal of	36	Baby, Water for	247
Alumni of Literary Colleges	565	Bacteria	616
American Public Health Association .	467, 522, 527	Bacteria and Bacteria	565
American Public Health Association Report	582	Bad Diet and Overwork	191
Anger, Evil of	519	Baker, H. B., Causation of Cold Weather Diseases	123
Anomalies Sanitary	248	Baker, H. B., Public Health in Villages	321
Antidote for Tobacco	615	Baldness	615
Antifat	292	Barber, Be Your Own	306
Antiseptic Carpentry	403	Bath, Ammonia in	287
Anxious Mother	292	Bath, How to Take	138
Apathy	151	Bathing in Japan	299
Appetite, Boyish	309	Beauty	213
Arsenic in the Home	149	Beauty and Training	133
Arsenic in Paper, to Detect	245	Bed Bug Exterminator	565
Arsenic Poisoning	154	Beef Extracts	523
Arsenical Poisoning from Green Can- dles	240	Beef	340
Arsenical Wall Paper	406	Beef, Milk and Phthisis	101
Artificial Fecundation	98	Beef Tea	570
Art in Sick Rooms	287	Beef Tea Fallacy	475
Ascent of Man	240	Beer Curse	402
Ashmun, G. C., Comfort of a Sanitary Object	608	Beer Picnics	459
		Belly Band	197
		Berliners Eating Horse Meat	615
		Benevolent Empress	457
		Best Sauce	152

Bicycles and Physicians	404	Cellar Ventilation	117
Bicycling for Health	354	Celluloid, Manufacture Dangerous . . .	461
Biting the Nails	627	Cement, Useful	406
Black Eye	457	Centenarians	357
Blondes	461	Chadwick, Sir E.	292
Blood Poison from Foul Teeth	97	Chambermaid Cure	132
Blue Lined Writing Paper	128	Charity Sermon	311
Bluish Sugar	102	Chemical Ballet	520
Board of Health, the, at Johnstown . .	419	Chest Exercise	462
“ “ “ the Change in the	401	Chest Troubles and Athletes,	621
Bodine, F. C., Heating and Ventilation .	34	Chevreul, M.	232
Boil Contagion	536	Chew Well	468
Borland, J. R., State Sanitation	5	Chicago's Health Commissioner	457
Borough Council, Faithful	203	Children, Fruit for	312
Bottle Makers, Health of	638	Children's Sleeping Rooms	514
Boxing, a Bishop on	241	Chinese Clothing and Comfort	243
Bread	265, 436	Cholera and Drinking Water	195
Bread, Soft Water for	565	Choose a Wholesome House,	638
Breath, Offensive	352	Church, Sleep in	90
Breathing Statistics	473	Cigarette Decadence	458
Bride, Care of a	520	Cigarettes and Children	398
Buffalo Bugs	257	Cisterns, to Calculate the Capacity of .	102
Bureau of Information	564	Cisterns Capacity	312
Burials	153	Cities, Health in	78
Buried Alive	364	Clean Streets	254
Burns, J. J., Contagion of Health . . .	62	Clean Thermometers	292
Burt, S. S., Prevention of Typhoid . . .	225	Clean Up	297
Butcher-Shop Regulations	615	Cleaning Hands after Staining	142
Butter Analysis	301	Cleveland Water Supply	54
Buttons, to Sew on	357	Coal Mines, Sanitary Condition of . .	91
Cabell, James L.,	459	Cocaine Poisoning	27
Canals as Nuisances	509	Cochrane, J., Prevention of Yellow Fe-	
Cancer Among Vegetarians	354	ver	169
Cancer Increase in Great Britain . . .	93	Code of Vaccination Rules	33
Candy Adulteration	87	Coffee Adulterated	196
Candy Colors, Harmless	458	Coffee, True Way to Make	466
Canton, O., Water Supply of	58	Colds, Prevention of	605
Carbonated Waters	154	Cold Weather Diseases	123
Carcases, Rosin for Destruction of . .	596	Cologne Drinking	469
Care of the Eyes	101	Color of Hot Weather Clothing	294
Care of the Teeth	150, 619	Color, Value of	301
Carpentry, Antiseptic	403	Comfort as a Sanitary Object,	608
Carpet, to Cleanse	151	Confectioners' Disease,	626
Carpet Washing	294	Confectionery, Pure	98
Carriage Disinfection	152	Constipation and Catarrh	243
Carry Your Own Soap	247, 360	Consumption among Indians	144
Carter, W. T., Cellar Ventilation . . .	117	“ in California	573
Catarrh and Constipation	243	“ Communication	572
Cat Diphtheria	128	“ Dissemination	569
Catsups	620	“ Fountain Head of	464
Causation of Cold Weather Diseases . .	123	“ in German Army	354
Cause and Effect	568	“ from Contagion	200
Cellar Air in Houses	446	“ from House Sweepings	97
Cellar Skeleton	621, 616	“ and the Hog	66
Cellar, Vegetables in	455	“ Preventing	228, 411

Consumption to Stamp Out	299	Death Rate	295
" Travelling with	238	Detroit Board of Health	403
Consumptives, Caution for	243	Deweese, W. B., Too Much Medicine	163
Consumptive Travellers	149	Diabetics, Good Bread for	153
Contagion of Health	62	Diet	467
Contagion and Dispensaries	462	Diet, Asthmatics	525
Contagion, Precaution against	355	Diet in Dyspepsia	309
Contagion, Study of	458	Diet for the Gouty	146
Contamination of Country Water Wells	511	Digestion, Road to	526
Conventional Mourning or Health,	623	Diphtheria,	403
Cooking, Art of	537	" Cat	128
Corns	238	" from a Bite	241
Corporeal Punishment at School	134	" Deserved	459
Correction	36	" Isolation In	238
Correspondence	581	" Municipal Control of	292
Costume, a Healthful	398	" Palaces	181
Coughs, Cure for	202	" and Pigeons	522
Councilman Gates on Hygiene	516	" Pasteur on	257
Cover Deformities	101	" Possible Cause of	192
Credit to Whom Due	564	" Prevention	415, 490, 513
Cremating Unclaimed Dead,	618	" Propagation, etc	223
Cremation of De Murska and Daughter	202	" and Yellow Fever	154
Cremation vs. Burial	498	" vs. Yellow Fever	293
Cremation in Detroit	566	Dirt and Disease	134
Cremation in Europe	151	Dirty Mattress; Filling	96
Crematory Hughes	310	Dirty Neighbors	296
Crime, Work Prevents	618	Disease a Disgrace	520
Criminal Neglect	362	Disease Germs, Fatality of	465
Croup Membranous	189	Disease, Getting Ahead of	81
Cuba, Yellow Fever in	96	Disease from Humans to Lower Ani- mals	188
A Curious Protest Against Railroads,	616	Disease, Prevention	92
Custom Breeds Tolerance	141	Disease, Remove Conditions of	89
Cutter, E., Bread	265	Disease was Inevitable	461
" Beef	340	Disgraceful Jail	142
" False Teeth a Cause and Cure of Throat Affection	387	Disinfectant, Cheap	514
" Milk Adulteration	212	Disinfectant, a Family	251
" Milk and Motherhood	157	Disinfectants	305
" Salt	126	Disinfection by Tobacco	92
Cycling	195	Disinterment of Dead from Contagious Disease	405
Cycle, Unnatural	198	Dispensaries Spread Contagion	462
" Natural	199	Doctor	457
Dairy Farm, Sanitary Requirements of	303	Dog, Origin of	352
Damages for Death from Inebriety	299	Dont's for Engineers,	627
Dancing, Muscular Force in	199	Don't Hurry	517
Danger in the Postage Stamp	143	Drainage, Effect of	353
Danger in Sowing Dry Poisons	353	Drains, Greatest Danger from	465
Danger of Summer Hotels	240	Dram Drinking and Physical Deteriora- tion	566
Daniel, R. P., No Yellow Fever in Flo- rida	551	Dread of Death	307
Day of Rest	307	Drink of a Noted Judge	518
Dead, How Shall We Bury	82	Drinking our Ancestors	200
Dead, Unclaimed, Cremating the	618	Drinking Water and Cholera	195
Deadly Sewer Gas	410	Drowning, Novel Case of	
Death, Hour of	150		

Drug Adulteration	376, 416	Fatal Well,	624
Drunkards, to Punish	479	Fathers Who Smoke	575
Drunkards, Trusteeing	457	Fat and Lean People, Rules for	143
Drunkennes a Crime	293	Fecundation, Artificial	98
Dudley, P., the Metal Worker and Health	388	Feet Sweating	147
Dust Removal	304	Female Employes, Health of	87
Duty to One's Neighbor	411	Fencing as Recreation	312
Dyspepsia, Diet in	309	Fight of Course	293
Dyspeptic Cough	355	Filthy Summer Resort	458
Early Rising Writers	245	Finger Nail Biting	194
Earthquake Symptoms	406	Fire Without Smoke	515
Eaters Eaten	409	Five Dollars for Kisses	353
Eating before Sleeping,	638	Five Stones of Success	521
Eclecticism	516	Flies and Ophthalmia	466
Economy in Street Paving	67	Floods and Epidemics	347
Education, Too Much	135	Floods, Lesson from	456
Edwards, J. F., Railway Sanitation . .	502	Floors, Infection from	193
Effects of Close Shaving	90	Florida State Board of Health	203, 246
Effect of Poison on Life	298	Florida, Yellow Fever in	92
Effects of Regimen	78	Florida, No Yellow Fever in	551
Effect of Town Life on the Body . . .	176	Food Adulteration	376, 416
Effects of Sewer Gas,	627	“ “ in Minnesota	94
Eggs Boiled	536	“ “ in Paris	457
Electric Light and Hygiene	566	Food Coverings	566
Electrical Quackery	405	Foreign Travel, Dangers of	403
Electricity, Death by	197	Fothergill, J. M., Town Life	176
El Paso	89	Foul Teeth, Poison from	97
Embalming	297	Four Generations Unbroken by Death .	239
Engineers, Dont's for	627	Fowler, J. O., Hygiene of the Teeth . .	451
English, W. T., Modern City Building,	430	France, Hygienic Reform in	100
Epidemics and Floods	347	Freaks,	617
Ericsson, Health Habits	175	French, J. M., Cremation vs. Burial . .	498
Erysipelas, Contagious	403	French Modesty	459
Escape of Gas into the Streets	514	Funeral Cars	469
Essence of Wisdom	574	Future of our Rivers as Water Supply,	440
Eulogy of Water	364	Game for Invalids	95
Every Man his Own Ancestor,	622	Garbage Burning	131
Evangelist and Quack	239	Garbage Cremation	149
Example of H. S. Ives	519	Garbage Consumer, Millwaukee	473
Existence, Struggle for	448	Garbage in Cities	577
Eyes of School Children	460	Garrett, Warning to	570
Eyesight of School Children	363	Gas Asphyxia	245
Factors of Human Happiness	238	Gas Escape in Streets	514
Faith Cure	527	Genese, D., False Teeth Plates	119
Faith Doctor and Young America . . .	458	Genius and Ill Health	186
Faith Without Works	471	Getting Ahead of Diseases	81
False Teeth, Danger of	140	Gipsey Hygiene	207
False Teeth Plates	119	Girls Toilet Articles	359
False Teeth and Throat Affection . . .	387	Gluttons, Scientific	150
Family Disinfectant	251	God Made the Country	521
Family Physician of Future	249	Goff, M. B., Ventilation and Health . .	332
Farmer, Foolish	294	Gospel of Health	196
Farm Plants, Poisonous	495	Gouty, Diet for the	146
Farmers Bed Rooms	140	Governor Beaver on our Board	145
		Governor Beaver and the Board	399

Governor Beaver a Sanitarian	259	Home Sanitation	284
Governor Ogelsby and the Illinois Board	148	Horseback as Antifat	292
Grand Destiny	354	Horse Meat in Berlin,	515
Gray, C., Sanitation in Pittsburg	553	House Cleaning	304
Great Fool	292	House Sweepings and Consumption	97
Green Candles, Poison by	240	House Tops, Unused	219
Groff, G. G., Healthful Homes.	28, 68	Houses, Cellar Air in	446
Groff, G. G., Poisonous Farm Plants	495	Household Refuse of New York	402
Groff, G. G., Pure Water Supplies	550	How to Dress and Walk	84
Growing Science	281	How the Girl Trains for Beauty	133
Growth of Hygiene	251	How to be a Nobody	460
Guarding Hot Beds of Disease	464	Humors of Training	112
Guiteras, John	457	Hygiene	470
Gymnastics for Schools	541	Hygiene in Chili	458
" Light	564, 597	Hygiene of Battle	514
Hagars Water Test	513	Hygiene of the Teeth	451
Hair, Care of the	147	Hygiene, International Congress so f.	193
Hair Mattresses	127	Hygiene, Gates on	516
Hair Regeneration	152	Hygiene, Growth of	251
Hair Tonic	294	Hygiene a Factor of Success	103
Half Gone when they got There	353	Hygiene, Industrial	566
Hall, Blakely, Humors of Training	112	Hygiene, Major Humphrey on	569
Hammermusik	470	Hygiene, Councilman Smith on	404
Hammock and Swing	517	Hygiene of Nose and Throat,	3, 77, 121 173, 230
Hanchett, H. G., Prevention of Colds,	605	Hygiene of Modern Building	430
Hands, Care of	308	Hygiene of Public Institutions	391
Hang Man, Lesson from	516	Hygiene for Roman Catholics	100
Happiest of Nations	143	Hygiene, Society of	457
Happiness, What Constitutes	145	Hygiene Tramp	459
Happy Old Age	414	Hygienic Advantages of Country Life	362
Harmony of Home	515	Hygienic Advantages of Electric Light,	566
Hartzell, J., Water Supply of Canton	58	Hygienic City	101
Head Cool, To keep		Hygienic Economy	408
Health	150	Hygienic Reform in France	100
Health of Bottle Makers,	638	Hysteria in Children	463
Health and Clear Brain	244	Ice Cream Poisoning	145
Health Contagion	62	Ice Supply, Gathering	620
Health Giving Park	239	Ice Water	411
Health Habits	175	Ideal Woman of the Future	85
Health of Female Employees	87	Idleness and Insanity	297
Health in Cities	78	If He was a Hog, &c.	514
Health in the Garden	141	Ill Health and Genius	186
Health Officer, Pay of a	519	Ill Temper, Cause of	89
Health, One Secret of	361	Ill Wind, etc	461
Health, Or Morning	623	Impressions, Material	606
Health Propaganda	463	Inauguration and its Results	234
Health and Wealth	136	Indians, Consumption among	144
Healthy House Building, I, 53, 155, 259,	385	Industrial Hygiene	566
Heating and Ventilation	34	Inebriety, Damages for Death from	299
Heredity of Morphine Habit	144	Inebriety, Juvenile	302
He Went Abroad	292	Infants Constipation	365
Hewitt, C. N., Public Health a Duty	115	Infants, Thirst in	150
Hog Ahead	95	Infantile Diarrhoea	453
Hog and Consumption	66	Indian, Intuitive Wisdom of	616
Homes, Healthful	28, 68		

Improved Physique of Americans . . .	565	Leffman, H., Soft Drinks	382
Infected Clothing	142	Leper3, Royal	568
Infection, To Avoid	199	Leprosy Contagion	515
Infection from Books	122	Leprosy	479
Infection from Milk of Tuberculous . .	300	Leprosy in Hawaii, its Beginning . . .	579
Infection from Floors	193	Leprosy Investigation,	614
Infection, Prevention of	193	Leprosy in Madras	468
Influence of Better Water Supply . . .	360	Leprosy in Nova Scotia,	615
Information Bureau	590	Lesson from a Hangman	516
Ingluvin in Vomiting	194	Lesson from the Floods	456
Insanity and Whiskey	152	Lesson of Rudolph's Death	139
Insects and Adulteration	153	Let Trouble do the Traveling,	615
Insects, Noxious	464	Let the Water Circulate	202
Insidious Effects of Impure Water . . .	200	Library Books, Infection from	122
Insomnia	97, 249, 413	Lice and Parasites, To Remove	148
Insurance Examiners, Hint for	199	Life Saving Work of Sanitary Reform .	94
Insurmountable Barrier	536	Light	353
Interdiction of Animal Magnetism Ex-		Light Fires Early	515
hibitions	244	Lime Burners and Consumption	196
Interest in Life	359	Lindsley, C. A., Infantile Diarrhoea and	
Irish Potatoes, Poisoning by	619	Feeding	453
Iron to Purify Water,	593	Lucky Prince of Wales,	621
Isolation in Diphtheria	237	Liquor and Death Rate	476
Is the Race Degenerating?	99	Literary Man on Doctors	137
Japan, Water Supply in	86	Little Ones in Spectacles	361
Jelly Fish Stings	565	London's Smoke Cloud	300
Johnstown	456	Longevity, Hungary	567
Johnstown, Report on	402	" Microbic	472
Johnstown, State Board at	531	Look Behind	256
Johnstown, Work at	418	Looking at the Bright Side	523
Johnstown Work Stopped	513	L. T. for Ladies	293
Jones, E. A., The School and the Health	20	Mad, Anthony Wayne	617
Joy, Jane E., Consumption and the Hog	66	McClellan, J. H., Purification of Water	
Juvenile Inebriety	302	by Iron,	593
Juvenile Smoking	51	Malcolm, E., On Beauty	213
Keep Traps Closed	151	Man, Left Legged	617
Kerosene and Disease	405	Marriage, To Limit	154
Keyser, Peter D.	457	Marvin, S. S., Bread	436
King's Evil	369	Maternal Impression	189, 606
Kitchen, Smells in	628	Matthews, Dr., At Jonstown	407
Laboratory for Harvard	202	Means to Prevent Spread of Scarlet	
Large Family	356	Fever and Diphtheria	415
Last the Worst	353	Measles, Contagion	88
Laundries	295	Measure to Suppress Fraudulent and In-	
Lawful Abatement of a Nuisance . . .	454	jurious Food and Medicine Adulte-	
Lazy and Indifferent Sanitarians . . .	455	ration	49
Lead Detection in Water	94	Meat and Milk Inspection, Need of . .	242
Lead Foil	293	Medical History of Washington	311
Lead Poisoning	242, 480	Medical Scepticism	404
Lead Poisoning, Unsuspected	613	Medicinal Value of Color	301
Lee, Benj., Retrospect of State Work .	160	Memory Education	147
" " On Johnstown	402	Men Dying Out	88
Destruction of Carcasses by Rosin, . .	596	Mental State at Death	250
Leffman, H., Selection and Treatment of		Mental Worker and Health	388
Public Water Supplies	481	Miasma and Ancients on the Neosho . .	120

Miasmatic Dams	524	Overcrowding, Precaution for	566
Mighty Power of a Happy Medium	574	Parents, Advice to	615
Milk Adulteration	212	Pasteur on Diphtheria	257
Milk Maid's Cramp	240	Pate de Foie Gras	237
Milk and Motherhood	157	Patent Medicines	408
Milk Poison	216	Patent Medicine Sampling	514
Millionaires, How Made	90, 293	Patti's Health	86
Minister of Public Health in France	198	Paving, Economy in	67
Minnesota, Food Adulteration in	94	Pediatrics and Public Hygiene	577
Minutes of State Board	205, 367, 422	Penalty of Infected Clothing	142
Missouri Physicians and the Board of Health	410	Pennyworth of Marriage	291
Money for State Sanitation	139	Pestilence, Docks of	200
Monstrosities, Display of	258	" Graveyard	571
Morphine Habit	295	" from Diseased Veal	409
Morphine Heredity	144	Philanthropic Prince	407
Mosquitoes, To Expel	404	Philadelphia Water	201
Mothers, Hint to	296	Physician's Care of his Hands	308
Multiple Births in Nice	459	Physicians who Use Bicycles	404
Mumps are Contagious	403	Physiology in Schools	91
Music as a Medicine	580	Pictures of the Board	417
Musical Hygiene	149	Pidgeons Cause Diphtheria	522
Mustard Plaster	567	Piper, J., Sanitation	313
Nails, Biting the	627	Pittsburgh, Sanitation in	553
Nail Brushes	152	Plague in Arabia	458
Naticoke Small Pox at	342	Plant Fruit Trees	238
Naphtha Poisoning	300	Plumber's Song	403
Nasal Troubles	404	Poison in Raw Salt	238
National Commissioner of Education	34	Poisoning from Teeth Plates	95
Natives and Consumption	474	Poisonous Farm Plants	495
Need of Arm Exercise	203	Poisonous Underclothing	516
Newton, W. S., Ancient People on the Neosho River and Miasma	120	Popular Medical Superstitions	304
New Quarantine Station	416	Postage Stamp Danger	143
Nice, Sanitary Condition of	151	Postpone Inauguration	235
Night Garments Warm	85	Potatoes, Poisoning by	619
Night Terrors	576	Potato, Jay Gould's	150
Normal Man	355	Precocity, Perils of	366
Nose, Hygiene of	3, 77, 121, 173, 230	Prescription	298
Noxious Gases	242	Presidential Ignorance	517
Nuisance, Abatement of	454	Prevention does Prevent	403
Obesity, Treatment of	526	Prevention of Colds,	605
Obesity, Water in	298	Prevention, Social Aspects of	619
Odor of Sound Meat	248	Privy, a Plague for Posterity	409
Offensive Odor of Breath	352	Prize for Cleanliness	237
Ohio State Sanitary Association	573	Professional Disciplinarian	514
Old Oaken Bucket	82	Profits of a Sanitary Investment	246
Old Folks	253	Protest Against Railroads,	616
Old Times Gush	520	Public Health Association	353
Ophthalmia and Flies	466	Public Health a Public Duty	115
Oranges	458	Public Health in Villages	321
Osborne, C. F., Healthy House Build ing	1, 53, 155, 217, 263, 385	Public Institutions, Hygiene of	391
Overcoat, The	626	Public Sanitation in Pittsburgh	553
"Ourselves,"	614	Public Water Supplies	481
		Purer Air for Sick Room	190
		Pure Water	550
		Purification of Water by Iron,	593

Quarantine Service, U. S.	282	Sleep in Church	90
Quarrels, Avoid	571	Sleeping Rooms, Children's	514
Quay's Piscatorial Wisdom	302	Sleeplessness, Hints for	87
Rabbits, Australian	238	Small Pox at Nanticoke	342
Railroads, Curious Protest against	616	Small Pox in France and England	96
Rain Water <i>vs.</i> Typhoid,	615	Small Pox in Omaha	36
Railways, Overwork on	91	Small Pox, Spread of	149
Rarefied Air,	615	Small Towns, Sewers of	14
Railway Sanitation	502, 512	Sewer Gas,	627
Railway Transportation	95	Smells in the Kitchen,	628
Rats as Scavengers	203	Smith, A. W., Water Supply of Cleve-	
Reading Railroad Flyer	358	land	54
Real Beauty	518	Smith, G. M., Unused House Tops	219
Reed, R. H., Prevention of Typhoid	7	Smith, J. L., Prevention of Diphtheria	223
Regimen, Effects of	78	Smith, P. F., Adulteration of Food and	
Reject Bluish Sugar	102	Drugs	376
Renovation of Naples	408	Secretary's Fourth Annual Report	37
Rhematism and Bees	460	Secretary's Special Report,	629
Roberts, T. T., Future of our Rivers	440	Seiler, C., Hygiene of Nose and Throat	3
Rohe, G. H., the King's Evil	369		77, 121, 173, 230
Roman Catholics, Hygiene for	100	Seeming Sanitary Anomalies	248
Rosin for Destruction of Carcasses,	596	Self Purification of Water	244
Roth, B., Shoulder Braces	125	Sewage Disposal	129, 236
Royal Lepers	568	Sewer Gas	410
Royal Nerves	146	Sewer Patching	521
Rural Homes	140	Sewers for Small Towns	14
Safe Cordial	563	Sewage, New Diposal of	177
Salads, Value of	568	Sex, Proportion in Germany	150
Salt	126	Smoke Clond	300
Sam Jones and Faith Cure	152	Social Aspects of Prevention,	619
Sampling Patent Medicines	514	Social Life and Surgical Disease	105
Sanitarians, Lazy	455	Soda Fountains Dangerous	239
Sanitation in New Jersey	238	Soft Drinks	382
Sanitation of Town and Farm Houses	313	Soft Water for Bread	565
Sanitary Boomers	257	Soil as a Filter	454
Sanitary Cranks	290	Soldier's Death Rate	99
Sanitary Dairy Farm	303	Something for Everyone	310
Sanitary Defenses in Florida	297	Soteriology and the Stomach	88
Sanitary Profits	246, 405	Spain, Minster to	194
Sanitary Progress	460	Spanish Quarantine	144
Save the Trees	241	Spare Bed	357
Scarlet Fever, Age	460	Stables as Nuisances	457
Scarlet Fever, Curious Transmission of	622	Staley, C., Sewers for Small Towns	14
" " Extraordinary	353	State Boards of Health	99
" " Long Life of Germs	472	State Board of Health	102
" " Precautions	153	State Board Minutes, Special	591
" " Prevented	144	State Sanitation	5
" " To Prevent	415	Sterilized Milk	118
Scented Cakes	152	Stimulants and the Voice	413
Scientific Temperance	567	Stings of Insects	358
School Children, Eyes of	460	Study, Too Much	518
Secretary's Report,	684	Stuttering	354
Shaving Close	90	Sullivan in Jail	461
Shoulder Braces	125	Sullivans Training Advice	356
Skeleton in the Cellar,	621	Summer Outing	412

Sunbeams Wasted	219	Tyrrel, G. G.	233
Sunshine a Medicine	355	Unclaimed Dead, Cremating	618
Sunshine in the House	145	Unclean Villages	361
Supplee, E. H., Cellar Air in Houses	446	Underclothing, Poisonous	516
Surplus Population	183	Undertakers Lament	462
Suspenders	295	Urine of Business Men	572
Swine, Investigate Diseases of	102	Useful Cement,	406, 616
Take Time to Eat	407	Useful Gift	462
Talcott, S., Hygiene of Public Institutions	391	Vaccination	243
Talleyrand and his Day	529	Vaccination in Paris	148
Taylor, L. H., Small-pox at Nanticoke,	342	Vaccination Rules	33
Tea Adulteration,	617	Vaccine Propagation	394
Tea Drunkards	406	Valuable Contribution	365
Tea Cigarette Dissipation	358	Vanderbilt a Beef Eater	148
Tea Test	296	Vaughan, C. C.	33
Teeth, Care of	150, 619	Veal, Pestilence from	409
Teeth, Hygiene of	451	Vegetables in Cellar	455
Ten Commandments	525	Ventilation of Cellars	117
Ten Good Things to Know	138	Ventilation of Churches and School Houses	518
Ten Health Commandments	470	Ventilation and Health	332
Tepid Baths, Utility of	565	Ventilation and Heating	34
The Crank Revolves	350	Ventilation, A Layman on	302
There's no Harm Done	246	Verdi's Vacation	146
The Wherefore	523	Vicarage and Graveyard	311
Thermometers, Clean	142	Villages, Public Health in	321
Thinning Out	463	Vinegar Adulterations	255
Throat Affection and False Teeth	387	Vital Statistics	474
Throat, Hygiene of	3, 77, 121, 173, 230	Vital Statistics in England	478
Tibetan Customs	359	Voice Photographing	298
Tight Collars	459	Vomiting of Pregnancy, Ingluvium in	194
Tight Lacing	124	Vose, J. E., Poison Milk	216
Tobacco	292	Wakeman, E. L., Gipsy Hygiene	207
Tobacco Antidote,	615	Wall Cleaning	293
Tobacco, Abuse of	517	Wall Paper, To Detect Arsenic in	245
Tobacco Disinfecting Power	92	Wanamaker, John, Hygiene in Success of	103
Too much Education	135	Warm Food vs. Drink	306
Too much Medicine	163	Warner at the Exposition	454
Toss the Baby, Don't	128	Wars vs. Disease	515
Training, Humors of	112	Warts	218
Travelling with Consumptive Patients	238	Wash Your Hands	242
Traveling to Trouble,	615	Water and Disease	197
Trouble Hunters	465	Water Impure, Effects of	200
Trouble and Traveling,	615	Water of our Rivers	440
Twins, Aged pair of	398	Water of Paris	477
Two Strangely Mortal Ages	132	Water Purification by Iron,	593
Typhoid Fever	100, 404	Water, Purified	203
" " Defend Yourselves from,	139	Water, Self Purification of	244
" " Prevention	7, 140, 225, 417	Water Supplies	550
" " Precautions	425	Water Supplies, Selection &c., of	481
" " in Philadelphia	200	Water Supply of Canton	58
" " vs. Rain Water,	615	Water Supply of Cleveland	54
" " Spread by Animals	147	Water Supply in Japan	86
Tyrotrocon in Oysters	294		

Water Supply of Philadelphia	201	Work Kills no Man,	613
Water Test	513	Work Prevents Crime,	618
Water Wells, Country	511	Work of School and Health of the Child	20
Weeds, Harmful	421	Work of the State Board	160
Weight of a Woman	239	World Leaning to Eclecticism	516
Wells in the Flooded District	401	Worthy Examples	131
Well Water	191, 202	Yellow Fever, Cause	567
Well, Fatal	624	" " Cost	237
Wetherby, J., Maternal Impressions,	606	" " in Cuba	96
Where is Mad Anthony Wayne,	617	" " in Florida	92, 252
Whittier, F. N., School Gymnastics, 541, 597		" " in South America	238
Wisdom of the Indian,	616	" " Origin of	96
Wolfe, Samuel	457	" " Late Epidemic of	268
Woman, Physical Development of	148	" " Precautions	567
Woman Wage Earners	239	" " Outlook.	285
Women Get Short of Breath	137	" " Prevention	169
Women, How they Rest	233	Young, to Keep	240
Wooden Nutmegs Outdone	354		

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COMMUNICATIONS.

HEALTHY HOUSE BUILDING.

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—INTRODUCTORY.

The following series of notes on healthy house building is written with the intention of presenting to the readers of *THE ANNALS OF HYGIENE* some results of the most recent investigations on the subject. In order that they may be easily comprehended, the use of technical terms will be avoided as far as possible, and sketches will be resorted to whenever the text seems to need such illustrations. And further, to make these notes of immediately practical use, extravagance in the condemnation or recommendation of bad and good features of house building will be avoided, and the enforcement of those principles only will be insisted upon, which cannot be neglected without the gravest menace to health and life.

That the non-medical public—the great army of house-builders—needs instruction in these subjects is most evident to those who observe such matters from a hygienic point of view. It is not too much to say, indeed, that of every hundred houses now building, scarcely five will show careful intelligent fore-thought in sanitary matters. Eighty certainly will be so carelessly located, planned and constructed as to neglect in the most indifferent manner,

opportunities for improving the sanitary environment; and twenty, at least, will show almost criminal ignorance about those matters which will be certain, sooner or later, to cost one or more preventable human deaths.

I address myself then to such house-builders as may desire to build rationally and healthfully, and who are especially anxious to be informed regarding those methods of building, which costing little or no more than the more common irrational methods are yet most potent factors in the make up of a healthful house.

The site.—Pure water, pure food, pure air, and a pure soil are now generally accepted as being the fundamental requisites to sound bodily health. Consideration of the first two, is, however, beyond the scope of these notes; and readers of *THE ANNALS* have, ere this, doubtless been well instructed in their importance, and the best means of securing them. Air and soil, however, more immediately concern us, and are especially connected with this question of site which we will now consider.

Wide range of choice in selecting a site for our future home, is, unfortunately denied to many of us, but in scarcely any case does it happen that we cannot exercise some judgment in this matter. The desirability of avoiding wet, marshy or miasmatic spots is almost too well known to warrant repetition. Equally so, that we should avoid the neighborhood of slaughter-

houses, bone-boiling establishments, and other similar places where odors arising from the breaking up of organic matter pollute the air. There can be no question that the vitality of all persons living in the vicinity of such places is materially lowered, and that they will be much more susceptible to epidemics, and to suffer from general *malaise* than others habitually breathing a purer atmosphere. Our sense of smell, in such matters, may be generally trusted; and while there are many sources of atmospheric pollution which cannot be so detected, it may be taken as a rule that all repugnant smells which arise from the decomposition of organic matter indicate invariably sources of danger to health. I speak of *organic* matter more particularly because it is still an open question whether the abhorrent stinks which emanate from petroleum refineries and other such establishments, or deal with inorganic matter are really deleterious, except in so far as they may directly effect our nervous system, and so indirectly, and in time break down the general health before we can become accustomed to them.

That our house should stand upon a pure soil is of equal consequence. By a pure soil I mean one which is free from an excess of organic matter. Therefore wet spots and "made ground" (that is ground filled in with refuse from the dirt heaps, etc., such as is common in some thickly settled communities,) are to be equally shunned. As to what degree of water constitutes excess cannot practically be defined. All soils containing free water, that is water to such a degree that a hole dug five or six feet deep will entirely or partially fill with water should be considered as beyond ques-

tion bad. Where it is necessary to select such a spot, either no cellar should be dug, and the house supported on piles, or on low walls with the enclosed space well ventilated.

If a cellar were absolutely required, it would have to be built coffer-dam fashion—absolutely water-tight on side and bottom—and the expense of so doing would usually be prohibitive. Yet anything less than this in the way of a cellar in such a case would lead beyond a shadow of doubt, as hundreds of well authenticated cases prove, to a train of illnesses in the family, resulting in the deaths of those least vigorous. Plain statement here is necessary, for without it no instructor of others in such subjects can clear himself of responsibility.

Fortunately, however, we are seldom restricted to such a site; and often, especially in the country, it is as easy, by the exercise of due foresight to build upon a good site as upon a bad one.

In order to appreciate the difference in such a case, a little examination into the condition of things will be first necessary. There is, in most soils, a depth not far from the surface at which we may find free water. This depth is not the same in any two localities, even in the same neighborhood; and in the same soil it varies, sometimes within wide limits, with the season of the year. Hence it has come to be said, that the ground water may be justly compared to a subterranean tide which rises and falls with something like ascertainable regularity. As a general rule this tide is at its lowest ebb from August to October, and reaches its highest level in February. The first thing to be done, then, when examining a soil from this stand-point

is to have dug several holes in various parts of the ground some six or eight feet deep. This will give us an opportunity of ascertaining with certainty both the character of the various strata which we shall have to disturb in excavating for the cellar and also the general level of the ground water.

For dryness, gravel or sandy loam is best, and clay or excavations in rock the worst; as the latter is certain to be infiltrated with surface water. Clay is especially bad for the underlying soil of a house, as being much disturbed by the action of frost and water, and as being cold and damp at all times. It is especially liable to movements both in a vertical and horizontal direction, causing cracks and dislocations in the building whose foundations it bears.

As building sites, especially in the country, are seldom exactly level, and often undulating, it is evident that if we choose the higher rather than the lower parts the soil will probably be much drier.

This is well illustrated in the accompanying diagram. The house whose cellar is at A, on the crest of the elevation, will always be dry so far as the ground water is concerned, while the cellar at B, will be wet during the high water of spring. It is necessary to bear in mind however, that the tops or slopes of the higher hills may not always be dry, especially

during the rainy season, as water running over the surface beds of rocks, or retained by impervious strata, may cause marshy spots, while the lower hillocks will be comparatively free from dampness.

The scope of these notes however which necessarily must touch upon so many subjects, will not permit of great detail in the treatment of any one. We must be content therefore to leave the question here with the injunction to the prospective house-builder to use common sense in his examination of a proposed site, and deliberate carefully before committing himself to a choice; for no other thing can be said to be of more importance in this connection, than a dry, well lighted site in a pure atmosphere.

(To be Continued.)

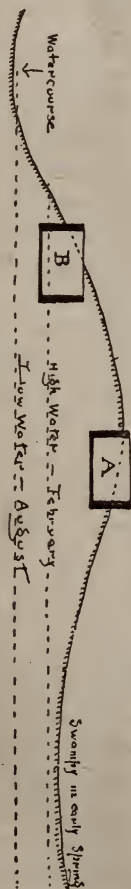
THE HYGIENE OF THE NOSE AND THROAT.

BY DR. CARL SEILER,

Instructor in Laryngology and Lecturer on Disease of the Throat and Nose, at the University of Pennsylvania.

(Continued from page 505.)

If we now observe a case of cold in the head, which has been taken by a person who has exposed himself in the manner described before, we find that he first observes a tickling in the nose which is soon followed by a sense of fullness, obstruction and perhaps pain more or less sharp in the nose, followed by a dull headache over the eyes and in the forehead; this lasts for, from a few hours, to a day or so, when a watery discharge makes its appearance, this in turn is followed in the course of from twenty-four to forty-eight hours by a thick discharge of mucus which is of a yellowish-white color, very tenacious and difficult to



remove by blowing. If nothing is done for the relief of the sufferer, a feeling of discomfort throughout the whole system shows itself which may or may not develop into quite a fever; this is particularly noticeable in children and in persons of a nervous temperament. The discharge gradually becomes less until about the ninth day the nose has assumed its normal condition and no more symptoms of cold are noticed. However, the tissues in the nose and the mucous membrane do not return as quickly to their normal condition, but remain inflamed and swollen a considerable time after all symptoms of an attack of cold in the head have passed. If now a repetition of the cold occurs by exposure to draft or by getting the feet wet, or what is more commonly the case in ladies getting their stockings wet from the skirts striking the lower portion of the leg in damp weather, after picking up the moisture from the pavements, it will cause a permanent change in the mucous membrane lining the nasal cavities and a disease known as "Chronic Nasal Catarrh" has begun. Of course, being only the beginning of this Chronic disease, the patient is hardly conscious of more than a slight cold in the head and usually pays no attention to the symptoms hoping from day to day and from week to week that it will get well of itself. In the meantime, however, cold after cold is caught and the disease becomes firmly established and difficult to get rid of. What shall we do in order to prevent this disease, or rather these frequent attacks of cold in the head from becoming chronic and thus developing into nasal catarrh? The first consideration is of course to avoid catching cold, but since that seems impossible in our climate

and with our method of living, we must look to simple remedies in order to abbreviate an attack of cold in the head so that a second attack caught soon after may find the nose in a normal condition. This can be done by cleansing the nose frequently of the mucus which accumulates within it, and also of the particles of dust and perhaps of bacteria which float in the atmosphere and are retained by the nasal mucous membrane during respiration, in fact it should be the habit of every one to cleanse the nasal cavities of all foreign matter morning and evening whether a cold be present or not just the same way as we are taught to keep the teeth and the mouth clean in order to prevent decay of the teeth. It seems natural that inasmuch as the nose is used as a filter of the air that dirt should be removed from that filter to prevent its becoming clogged and to interfere with its natural functions. I am in the habit of instructing all my patients to use a cleansing solution night and morning, and to make this cleaning process a part of their daily toilet; it is however of the greatest importance that this cleansing solution should not be irritating, but, on the contrary should be bland and agreeable. Many people are in the habit of using salt and water sniffing it up the nose in order to cleanse it, but unless a definite quantity of salt is used in a definite quantity of water, this solution is irritating and the reader can readily demonstrate this fact in his own person by taking ordinary water and sniffing it up his nose. He will then find that the water produces a stinging sensation which lasts for a considerable time, and in many cases gives rise to a slight cold in the head. Only when an even teaspoonful of salt

is used in a pint of water does the smarting cease and the solution becomes unirritating. Salt solution alone is however not sufficiently cleansing because the mucus is not easily dissolved by it and therefore a solution containing baking soda and borax together with some disinfectant substance which of course must be of an unirritating nature ought to be preferred. Mr. Fred. Brown, one of our Philadelphia Druggists, has prepared a compressed tablet which when dissolved in four tablespoons of warm water gives a solution, which answers the purpose better than any other solution which I am acquainted with, and which when sniffed up the nose during an attack of cold in the head and even in Hay Fever gives almost instantaneous relief from the distressing symptoms which we are all so familiar with. In view of the fact, that these tablets contain disinfectant substances such as Eucalyptol, Menthol and Oil of Gaultheria, &c., they have the effect of destroying the disagreeable odor so frequently noticed in cases of nasal catarrh besides leaving a cooling sensation in the nose after their use.

(To be Continued.)

SOME SUGGESTIONS ON STATE SANITATION.

BY J. R. BORLAND, M. D.,
Franklin, Pa.

The queries which present themselves to our State Board of Health, seem to be, "how shall we provide for, and secure the proper sanitation of the state, in the most economical way?" And "how shall we secure the hearty co-operation of the people in such measures as may be required to effect the object?"

The two great essentials of life, health and longevity are *pure air and water*. To prevent contamination and secure their purity should be the chief object of sanitary efforts. It is well known that in the early settlement of the country, the pioneer built his residence for convenience in proximity to a spring; the barn, pig-stye and privy followed in time, and were also built near the spring or the inlet issuing from it; and now, when new settlements are made in wilderness places, the custom is adhered to. The washings from such houses, barns, pig-styes and privies, in nine cases out of ten, find their way into the "spring-run;" and thus tens of thousands of spring-runs are contaminated at their sources. These runs form creeks, and thence flow into rivers, which convey the putrid waters to populous towns and cities below.

But, says one, "running water purifies itself." How? There are but two ways by which running water purifies itself; they are by sedimentation and commingling with the atmosphere, and these depend upon whether the stream be sluggish or rapid, whether its path be over falls and descending rocky beds, and can only be partial in their action. So far as water is concerned, sanitation has been applied *to the wrong end* of our water courses—the *lower end*, where populous towns and cities are usually located; whereas, it should be applied, just as vigorously, *to the upper end, to the springs*, the fountain heads and their surroundings.

The manner and methods of sanitation must be brought home to every house-holder of the rural districts, as well as elsewhere. Each should be

made to feel that he is, in a sanitary sense, *his brother's keeper*.

The State Board of Health is handicapped by its powers and means being limited and for the want of proper co-operation by the people, who reside at the sources of our water supply.

I beg to submit a plan, which, if properly carried out, will secure these objects more fully than any other heretofore educed, and bring the people *enrapport* with the State Board. The suggestions here named might be embodied in a bill and presented to the Legislature as a *supplement to the Board of Health Act of 1884*.

1st. *The Coroner of each county shall be ex-officio the Health Officer thereof*, and in counties where there is no such officer, the Commissioners thereof shall appoint a reputable physician to be the Health Officer thereof.

The duties of the Health Officer shall be, to have and exercise supervision over the *Sanitary Police* and Health Committees, to be hereinafter named, in his respective county, by and in accordance with the rules and regulations of the State Board of Health.

2d. *The constabulary of each county shall constitute the Sanitary Police thereof*, subject to the Health Officer aforesaid. It shall be the duty of the Sanitary Police to make a proper inspection of their respective districts of all residences, barns, out-houses, water courses, &c.; search out all nuisances, and see that they are properly abated, and attend to all such other matters as may be required, and report to the Health Committee herein after named.

3d. The Justices of the Peace, Assessor's and Constables of each

township, shall be constituted the Health Committee thereof, and shall have direct supervision of the same, and make report of work done to the County Health Officer semi-annually, by and in accordance with the rules and regulations of the Board.

4th. The County Health Officer shall collect and tabulate the reports of the several Health Committees, with such other matters as he may deem necessary semi-annually, transmit a copy thereof to the State Board, and deposit a copy with the Commissioner's to be placed on file in the office of County Records, in accordance with the rules and regulations of the State Board.

5th. All *physicians* shall report the appearance of any contagious or infectious disease appearing in their practice within twenty-four hours after its cognizance to the Health Officer, who shall at once adopt such measures as he may deem best to control and suppress the disease. It shall also be the duty of every physician to keep a correct list of all births and deaths occurring in his practice and make report of the same to the Health Officer semi-annually. All mid-wives shall report the births they may attend in the same manner. The State Board shall furnish all necessary blanks for the foregoing purposes.

5th. The Health Officer, Health Committee, and Police of each county shall be paid reasonable wages for such labors as may be required, as other county and township officers are now paid.

The foregoing plan requires no new officials, and will be attended with a comparatively moderate expense, each county paying for its work. Those

with sparse population will pay no more in proportion than the more populous. The police, in their rounds can furnish every family with such information in the form of circulars as the State Board may desire.

The subject might be enlarged upon, but this is enough. All persons interested can understand, if they will, the suggestion here presented, and if they have a better way let them present it. There is no time to lose. That we need something of the kind needs no argument.

PREVENTION OF TYPHOID FEVER.*

BY R. HARVEY REED, M. D.

Secretary State Sanitary Association ; Health Officer,
Mansfield, Ohio.

I shall never forget, when a boy attending school in the old district school house, when my teacher (one of those tall, lean, lank, old maids) demonstrated to the class the meaning of an axiom, which, to my surprise, seemed so simple that before I thought I exclaimed : "Why, any person ought to know that ;" for which I was sentenced to the corner, with my face toward the wall, for one hour.

I have never felt so much inclined to repeat that expression from that time to this, as I did when a medical friend of mine some time ago invited me to write a paper on the subject of typhoid fever being a preventable disease ; but for fear I would have to stand with my face in the corner, I concluded that silence should prevail, and, as the first rule in the military service is to obey orders, I, as a volunteer in the army of

physicians in Ohio, decided to obey the command, lest there might still be some one in the great state of Ohio who is not yet aware of the fact that typhoid fever can positively be prevented by proper sanitary care.

I shall not attempt to go into the fifteen-thies, however, to prove to you that typhoid fever is a preventable disease, even if you were exceedingly fond of long, dry papers ; but you will have to be content this time with my asserting a few facts, and then leave the matter with you to decide hereafter whether I have told you the truth or not.

Now, for fear there is some one present to-day who does not clearly understand, by experience or otherwise, what typhoid fever is, we will just briefly define what we mean by this familiar term.

Typhoid fever is an acute febrile affection, particularly characterized by stupor and low muttering delirium, accompanied with diarrhœa and a peculiar eruption of the skin, and thickening and ulceration of certain glands located in the walls of the intestines, known as Peyer's patches.

UNDOUBTEDLY CONTAGIOUS.

It is undoubtedly a contagious disease, being capable of direct or indirect communication from one person to another through a proper medium, such as water or milk, but not a strictly infectious disease like small-pox, measles, or scarlet fever, and not so likely to spread by contact with the air of the sick chamber as the above diseases.

It is caused by the swallowing of a germ peculiar to typhoid fever, and known as Eberth's bacillus ; this germ usually finds its way into wells, springs,

*A paper read at the Sixth Annual Meeting of the Ohio State Sanitary Association, held at Canton, Ohio, November 14 and 15, 1888.

rivers, and creeks which are used as a water supply, or through the washing of vessels with contaminated water into milk, and in this way is swallowed and produces typhoid fever by rapidly multiplying when taken into the alimentary canal, where it seems to thrive best, and, through its peculiar irritation to the intestine, produces ptomaines which are absorbed and cause the symptoms of this loathsome disease.

While its most common and favorite medium of communication from one person to another is water or milk, it is possible to be communicated by the air. For instance, this germ may become so dry as to be picked up and floated on the air, and thus find its way into the mouth and alimentary canal; yet it must be remembered that the simple inhaling of this germ into the lungs will not produce typhoid fever; to accomplish this it must be swallowed and enter the alimentary canal—the sacred aden of all typhoid fever bacilli.

HOW THE CONTAGIUM IS CARRIED.

But, you ask me, how do these germs get into the drinking water?

One of the most common ways is the careless disposal of the dejecta from typhoid fever patients, which are often thrown upon the ground, or in old, leaky privy vaults, and in this manner find their way into wells or other sources of water supply, and are thus conveyed to those who drink this contaminated water.

You must not imagine that filtration through the soil destroys this active little germ; it is not so easily destroyed.

The experiments of Lausen, where the water had been filtered through a mile of earth without sterilizing the

germs contained in it, seem to prove without a doubt that the poison of typhoid fever may undergo what would appear to be very efficient natural filtration without losing its vitality.

Deep wells cannot always be trusted, or looked upon as a safe-guard against typhoid fever, as was clearly proven by the Dudlow Lane well, near Liverpool, England, which had a total depth of 443 feet, yet was fouled by percolation from cess-pools.

Surface-wells, surrounded by cess-pools, or stables, hog-pens, manure-piles, sewers, or any kind of surface-filth, in all stages of decomposition, are still more dangerous and objectionable.

THE VITALITY OF THE GERM.

The vitality of this active little germ is remarkable. When we know that Pruden succeeded in resuscitating them from ice, in which they had been frozen for 103 days; we are led to shun the ice our forefathers taught us would purify itself by freezing, lest it prove a luxurious source of poisonous infection. On the other hand, the same investigator resuscitated these same germs after having been heated to 133° Fah., which teaches us that nothing short of boiling our ice and drinking-water thoroughly will insure protection against typhoid fever, in case there is the least suspicion of its contamination.

Do not mistake what I said in regard to contaminated milk, meaning that the milk was contaminated with typhoid fever germs as it came from healthy cows, as that is not the case, but your milkman may wash his cans with infected water, and thus convey the germ to the milk, which, under certain circumstances, favors the rapid

growth of these bacilli, which, in this way, may be communicated to his patrons and start an epidemic of typhoid fever.

HOW MILK IS INFECTED.

I remember, when a student, listening to Professor Stillè, of the University of Pennsylvania, relate an instance of this kind, where a severe epidemic was distinctly traceable to the patrons of a certain milkman, who, on investigation, was found to have washed his milk-cans in contaminated water from a well near his stable, that had long been abandoned for house use.

The use of milk from diseased cows may, however, cause an epidemic of typhoid fever, as was the case at Carlisle, England, where a sudden outbreak of this fever sprang up among the users of the milk from a certain dairy, which, upon investigation by the medical officers of health, proved to be caused by using the milk of cows affected with an infective fever.

Again, milk kept or cooled in foul cellars, or in rooms supplied with foul air from sewer emanations or privy vaults, will readily absorb these germs and act as a fertile source for the spread of a typhoid fever epidemic.

As I said in the beginning, that typhoid fever is a preventable disease is clearly a self-evident truth.

I am not exaggerating when I say that thousands upon thousands of cases could be produced to prove this sweeping assertion.

INSTANCES OF PREVENTED EPIDEMICS.

Only the first of last September, a year ago, such an instance occurred in the practice of Dr. McGall, of Lapeer, Mich., when a railroad employee came from the South, sick with a fever, and stopped with his father and mother.

No care was exercised with the stools in the way of disinfection, but they were thrown into a privy vault in the rear of the house, and in close proximity to the well.

The doctor says: "Wash-water was thrown on the surface of the ground, which was very dry at the time. About the 7th or 8th of September a copious rain fell and soaked the sandy soil, and on the 14th his father, mother, and a brother (who was a student in my office, and who boarded at home) were attacked with fever.

"On this day I got home from Washington, and found four of them down with a severe type of typhoid fever, and in two weeks his wife and child were attacked, also a child across the street, who had used water from the same well.

"None of the people from either of these houses were in the contaminated house. In a house still farther south one case has occurred, and I was at a loss to account for this case till a few days ago, when the young man said that at the mill where he was working they had used the same water for a few days, owing to disarrangement of the pump at the mill.

"Two others of the mill hands who used the same water were attacked about the same time.

"One is now convalescent and one is dead, as also one of the children.

"When I took charge of the cases I ordered the discontinuance of water from the well, the disinfection of the stools, and no new cases are now reported.

"People who assisted in taking care of the sick, and who used water from other sources, have not been attacked."

Clearly the railroader brought the fever home; the well became infected,

after the first rain, from slops and privy vaults, and the other cases got their seed from the water.

THE IRON MOUNTAIN EPIDEMIC.

From the proof-sheets of *THE SANITARY NEWS*, kindly furnished me by Mr. G. P. Brown, of Chicago, the former proprietor of that spicy journal, I am enabled to furnish you a report of the Iron Mountain epidemic of typhoid fever, as furnished by that eminent investigator, Professor Victor C. Vaughan, of the Michigan State Board of Health, who in person not only investigated into the causes of this epidemic, but conducted a valuable series of experiments on the cultivation of this germ, which he found grew abundantly in milk, and also meat cultures, and to rapidly multiply when introduced into sterilized water, which was kept at a temperature of 115° F.

In speaking of this epidemic he says: "The result leaves no room for doubt concerning the existence of the specific poison of typhoid fever in Iron Mountain water. Iron Mountain is a village, with a permanent population of 4,800 and 2,000 floating summer population. The dwellings are much crowded. The village is situated in a valley, extending up the hillsides. About three hundred houses have a water supply from a shaft forty feet deep and free from contamination.

"Those drinking this water were almost wholly exempt from the disease. The remaining portion of the village received its water supply from wells, sunk from six to twenty feet. No sewers are provided. A ditch running through the village is used as an open sewer, and empties into a small lake, which gave the ice supply for the village last summer.

"The epidemic occurred early in August, following a severe epidemic of dysentery. Up to December 21, 350 cases had occurred, of which 10 per cent were fatal.

"One well, sixteen feet deep, showed 2.27 parts of free ammonia per million and eight grains of chlorine per gallon.

"This well was under a house, and was forty feet from the stable and privy. Thirteen cases of typhoid fever occurred in the house over this well. Some provision for disposal of excrement, slops, and garbage should be made, as it matters not how cold the winter may be, freezing will not kill the germ. The disease was introduced into Iron Mountain by a man from a railroad camp, who died a few days after his arrival there."

THE PLAGUE AT PLYMOUTH.

"You all, no doubt, remember the terrible scourge of typhoid fever that visited Plymouth, Pa., only a few years ago, during which 1,104 persons were stricken down with this foul disease, of whom 114 died, while the actual cost of that epidemic was carefully estimated at \$97,120.25, all in hard cash, saying nothing of the loss to that village from 114 deaths, whose yearly income, when in health, amounted to \$18,419.52, to all of which is yet to be added the sorrow and suffering that cannot be measured in dollars and cents.

An investigation into the cause of this greatest of modern local epidemics by so eminent an authority as Dr. Benjamin Lee, Secretary of the State Board of Health of Pennsylvania, showed that in a house on Girard Avenue, in Philadelphia, a blacksmith was taken down with typhoid fever in

September, 1883; after a few days, however, he was removed to the Episcopal Hospital, from which he was discharged on the 13th of the following October.

In the following May or June, 1884, a street-car conductor, who was boarding at the same house on Girard Avenue, was taken down with the fever, and also taken to the hospital for care and treatment.

In the following July a huckster, boarding at the same house, was attacked with typhoid fever and sent to the same hospital.

Here were three cases, all boarding at the same house, and all taken down with typhoid fever, the attacks ranging over a period of about eleven months.

A CASE OF AERIAL INFECTION.

Dr. Lee tells us that from all the information he could gather by personal inspection and diligent inquiry of neighboring physicians and other observant citizens, he had not the slightest doubt that, while there were numerous and glaring unsanitary conditions in the vicinity, the real cause of the cases of typhoid fever occurring in this ill-fated house on Girard Avenue was to be found in the grossly defective cess-pool, with its foul exhalations, completely shut in from lateral air currents, and pouring through open doors and windows into the kitchen and dining-room, to be inspired by the inmates, or worse still, to be absorbed by the food in course of preparation for the table, and thus brought in contact with the alimentary mucus membrane. "It is proper to state in conclusion," he adds, "that the dangerous character of this particular cess-pool cannot be abated or removed by any amount of cleansing or empty-

ing, however frequently performed. Its complete abolition alone can bring safety to the household.

THE COURSE OF THE CONTAGION.

"Into this house, with its history of fever and its foul environment, late in December, 1884, came David Jones, fresh from his mountain home, overlooking the vale of Wyoming, to visit his city brother and spend his Christmas holidays. Forth from this house, early in January, 1885, again he went, but went not as he came. A poisoned blood now coursed through his veins; and shortly after returning to his home he was prostrated with what his physician soon pronounced typhoid fever, and lay on his back for many weeks in his cottage on the banks of a little stream which supplies the reservoir of the town at the foot of the mountain.

"This little town at the foot of the mountain was Plymouth, a mining town of some 8,000 or 9,000 inhabitants, situated on the right bank of the Susquehanna River, three miles below Wilkesbarre. As a large part of the town is upon a hill side, the surface water readily finds its way into the Susquehanna River.

"No system of sewers and no effort at systematic drainage have ever been introduced, and the borough council seem singularly apathetic in the matter of sanitary reform. The drainage from each house is into cess-pools situated in the back yard, or, in some cases, it is even into the streets themselves, which, in parts of the town, have not a proper arrangement of gutters for disposal of this drainage.

"It was found, on further investigation, that the house in which the young man lay with typhoid fever he had contracted at his brother's house

in Philadelphia was situated so near the stream supplying the water reservoir at Plymouth, that as soon as the weather permitted a sufficient thaw to allow the frozen accumulations of weeks of dejection from this one case to reach this stream, only a few yards distant, with the conformation of the ground favoring its course to this water supply, a local epidemic of such magnitude ensued during the following April and May of 1885, and continued until the following September, that it is scarcely paralleled in modern history, and at the same time making this 'one of the most instructive as well as one of the most terrible instances which ignorance and negligence have contributed to the records of disease.' "

THE FEVER FOLLOWS DRY SEASONS.

Professor Vaughan, in speaking of the Iron Mountain epidemic, to which I have already referred in this paper, says: It is well known that typhoid fever follows dry seasons, and is coincident with low water in wells. There are, on an average, 1,000 deaths and 10,000 cases of sickness from this disease annually in Michigan. These figures can be greatly reduced if people will cease polluting the soil about their houses with slops, garbage, cess-pools, and privy-vaults, and will see that their drinking water is pure beyond all question. When there is any doubt, the water should be boiled and kept uncontaminated afterward. While the germ most frequently finds its way into the body with the drinking water, it may be taken in with any food, and even with the air. The earth, air, and water about our homes must be pure, if we would escape this disease altogether. When cases of typhoid fever occur, all discharges should be thoroughly disinfected."

THE EFFECT OF PURE WATER IN MANSFIELD.

Since Mansfield has practically ceased the use of water from wells throughout our city and adopted the use of water supplied by the powerful artesian wells drilled just north of our city, and which have been given the flowery title of "wonderful artificial geysers," a chemical analysis of which was made by Professor C. C. Howard, of Columbus, and showed the water to be unusually pure, and more recently pronounced by the Professor in a private letter to the writer, the purest water that he has examined for any city in the State of Ohio, the prevalence of typhoid fever in our city has greatly diminished; only one death from this disease having been reported during the summer and fall, and but a few cases having occurred in the city, and they were all in persons who used well-water, which is all more or less contaminated with organic filth throughout the principal part of our city, which certainly demonstrates to any unbiassed mind that typhoid fever is a preventable disease, and can be prevented by the use of pure water.

SIX FACTS TO BEAR IN MIND.

Before closing this paper, allow me to call your special attention to a few facts:

1. Typhoid fever is caused by the introduction of a specific germ into the alimentary canal.
2. That this specific germ multiplies in the alimentary canal, and in turn is thrown off in the stools of the patient.
3. That its vitality is much greater than at first supposed, resisting a variation of temperature ranging from even below the freezing point to 133° F. without being destroyed.

4. That the germ may be communicated from one person to another by water, milk, foods, and air, in the manner illustrated in the cases cited in this paper.

5. To prevent its spread all the dejecta should either be burned at once (which is preferable) or thoroughly disinfected, by throwing them into a pot of boiling water and thoroughly cooking them, or use some effective germicide, such as a strong solution of the bichloride of mercury in sufficient quantities as to insure their destruction before they are buried, which should be at a sufficient distance from any neighboring water supplies, as to insure their freedom from contamination.

6. If the water supply is of a suspicious character, thoroughly boil it before using, and then place it where there is no possibility of its becoming infected. If ice is to be used to cool the drinking water, keep it out of the water, only packing it around the water vessel, but not putting ice into the vessel or allowing the melted ice in any way to enter your drinking water, and thus take the chances of its contamination.

By the strict observance and practical application of these few simple hints, I am certain you will soon be led to believe that typhoid fever is a preventable disease, and realize the words of the poet, who, in the "Song of the Besieging Army," said :

We're an army of bacilli,
And germs and micrococci,
Most numerous to behold !
We've been brought into distinction
To cause the quick extinction
Of people in the world.
But sadly do we rue the time
When scientists "caught on" our crime,
So ancient, yet so bold !

In former days of medicine,
'Twas not thought necessary in
Bad cases of disease,
For a doctor to decide, and tell
What made his patient ill, or well,
Unless it him should please.
And so an "All-wise Providence"
Was made to stand the consequence
Of causing their decease.

But in these later days of sense,
The students must be most intense
In seeking after wisdom.
Knowledge microscopical,
And also biological.
(And others still to come),
Is now required by boards of health.
But medics often pass by stealth
Three years' curriculum !

So great and urgent was the call,
For knowledge of the causes all,
Which blight the strong and healthy,
That savants undertook to find
The reasons for the great decline
In health, of poor and wealthy.
So well their task they set about,
They were not long in finding out,
Our family so stealthy.

And now Pasteur, and Koch, and Klein,
Sternberg, and Cohn, and Laveran,
Can call us all by name ;
They know our family history,
Our pedigree, posterity,
And just from whence we came.
For years we've fought with ghoulis glee !
Though small, and very hard to see,
We've got there just the same.

But now our tricks, so dark, are o'er,
And what we've done with germ and spore,
Is fully comprehended ;
The doctors know our tendency.
Of us they've made a list, you see,
To text-books we're appended.
Professors make nice diagrams.
Of us, as well as cryptograms.
Alas ! our dream is ended.

AT PLUMBERS' PERJURIES they say
Jove laughs, and probably he does
when he sees a plumber send in a bill
of forty dollars for professional services,
which simply consisted of feeling the
pulse of the kitchen pump-handle.

SEWERS FOR SMALL TOWNS.*

BY PROFESSOR CADY STALEY.

Case School of Applied Science, Cleveland, Ohio.

The growth of our cities and villages is so rapid that they attain considerable size before any attention is paid to sanitary regulations. The larger cities have adopted some system of sewers, but the villages and smaller cities are as a rule without sewers. The larger cities have been obliged to construct underground conduits in order to relieve the long streets of storm water, and the more important but less evident need of sewage conduits have in that way been provided for.

Many of the most famous sewers in European cities were intended only as storm water sewers, and were not what we understand by sewers—that is, they were not intended to carry off all the liquid wastes from the houses. The celebrated sewers of Paris illustrated this. No one is allowed to connect water closets with them, as we do with our sewers. They were built to provide for storm water and street washings.

No fecal matter was allowed in the London sewers till 1815, and the connection of water closets with them was not made compulsory till 1847.

In the smaller towns, where the paved streets are not so long as to cause trouble with storm water, this pressing necessity for sewers does not arise, and the construction of sewers is very likely to be deferred as long as possible. In our new country most of the towns are small, however brilliant the future prospects may be painted by the real estate boomers.

There are in the United States about 100 cities with a population of over

20,000; between 600 and 700 with a population of from 5,000 to 20,000, and many times that number of villages of from two to five thousand. In a large majority of these towns no storm water sewers are necessary. The rainfall is led by street gutters to the water courses, and no serious inconvenience is felt from this source.

In these cases, sewers will not be built until two things are made evident. 1st, The necessity for sewers to carry away the liquid wastes from the houses; and 2d, that the necessary expense of efficient sewers is only moderate.

When dwellings are widely separated, as in country districts, methods for the disposal of solid and liquid refuse may be tolerated, which would be very objectionable where the dwellings are near together, as in villages and cities.

The sanitary condition of many farm houses and their surroundings is only endurable, because the houses are so far apart, and there are so many miles of unpolluted soil and air in the vicinity, that the gases and odors, arising from garbage and slops, which have been flung out on the surface or which stand putrefying in vaults and cess-pools, are diluted so as to render them less disagreeable and dangerous. But place a number of such houses with their surroundings in close proximity and the evil will become painfully manifest.

In the *early stages* of the formation of a town, no special attention is paid to sanitary matters. The same methods for the disposal of solid and liquid refuse are employed as in a farming community. Each householder adopts the plan that suits him best. And even if the plan be in every way objectionable, so long as the houses

*Read before the Ohio State Sanitary Association.

are far apart, no one will care to interfere. But when, with the growth of the town, the houses are placed closer together, the conditions become entirely changed. The sanitary condition of the immediate surroundings of each individual concerns not only himself but the whole community in which he lives; and what was before a personal matter now becomes a question of public policy.

The presence of man brings pollution to earth, air, and water. Wherever human beings are congregated in large numbers, the disposal of the solid and liquid refuse becomes a serious problem. Sanitary matters will not take care of themselves; proper sanitary regulations are a necessity.

The common use of cess-pools is in every way objectionable. The soil becomes polluted with sewage, and the air is filled with noxious gases arising from the sewage-soaked earth, and from the putrefying masses in the vaults and cess-pools. If cess-pools are used at all they should be water tight, and should be emptied when filled. This necessitates a constantly recurring nuisance, and only partly removes the difficulty.

The use of cess-pools are especially objectionable where wells are used as a source of water supply, as is common in the smaller towns. A well is simply a hole dug in the ground into which the water which has sunk into the ground may drain. The quality of the water will depend upon the condition of the soil through which it has passed.

In towns without sewerage, cess-pools by the hundred are dug in the earth into which all manner of filth is thrown. Into this same soil wells are dug, and the drippings from the cess-pools are caught and drank and the

seeds of disease are sown broadcast in the community. One often hears it said that water which passes through the earth is filtered and purified; but it must not be forgotten that while the earth acts as a sieve and removes the suspended impurities, the oxidation of organic matter depends upon circumstances, and whatever is in solution remains to a large extent in the water.

It frequently happens that a well on one lot is within a few feet of a cess-pool on the adjoining lot. The high, close board fence on the lot line may prevent attention being called to the fact of the close proximity of the well and the cess-pool, but a fence on the surface has not been found to act as an efficient purifier of polluted ground water.

The following example will show the danger of trusting to filtration through the soil for purifying water:

The Swiss village of Lausen, near Basle, is supplied with water from a spring, situated at the foot of a mountainous ridge, called the Stockhalden. In this village, where there had not been a single case of fever in many years, an epidemic of typhoid fever broke out, which struck down seventeen per cent. of the whole population. The cases of fever were pretty evenly distributed among the families in the village, with the exception of six. As the six families which escaped did not use water from the spring, suspicions were aroused concerning the water and investigations were made. It had previously been noticed that when the meadows in the Furlerthal—a little valley on the other side of the Stockhalden ridge—were irrigated, the volume of water in the spring was increased; and by the sinking of the soil in one of the meadows in the Fur-

lerthal, a vein of water was discovered, which, it was supposed, led to the spring in Lausen. It was found, upon investigation, that a peasant living in the Furlerthal had returned home from a distant city, sick with fever, and that the brook in which his clothing had been washed and into which the slops from the house had been thrown, had been used to irrigate the meadows. This water thus spread out over the fields and then filtered through the ridge, a distance of a mile, still carried the germs of disease in it, and brought death to the unsuspecting inhabitants of Lausen.

To prove, conclusively, that the spring was supplied from the Furlerthal, and to determine whether the water passed through an open vein or was filtered through porous material, the following experiments were made: Several hundred weight of salt was dissolved and poured into the hole in the Furlerthal, where the vein was discovered. In a few hours the water of the spring became very salt, and the connection between the water in the Furlerthal and the spring at Lausen was established beyond a doubt.

They now mixed two and a half tons of flour in water and poured it into the hole, but no trace of the flour could be found in the spring; proving that the water was so thoroughly filtered as to remove the minutest particles of the flour, and yet it still retained its infective properties.

Clearness is no proof of purity in water. The waters of the Saratoga springs, although thoroughly impregnated with various minerals, are as clear as ordinary spring water, and in a glass of water as clear as crystal there *may* be poison enough to kill a whole family, not only by the com-

paratively slow and uncertain process of fever, but surely and immediately. Deleterious gases may indeed add a sparkle to well water, and the peculiar flavor so highly prized in some wells may be borrowed from a neighboring cess-pool.

Dr. Victor C. Vaughn, Professor of Physiological and Pathological chemistry in Michigan University, states in a report to the State Board of Health, that a series of experiments which he has conducted confirms the germ theory in cases of typhoid fever. The fever was produced in a cat by inoculation, and the cat showed all the symptoms of the disease. In connection with this Dr. Vaughn states: "Last August there was an epidemic of typhoid fever in the village of Iron Mountain, a place in Northern Michigan of about 4000 inhabitants. Part of the town was supplied with water from a mountain spring, and part from private wells from six to twenty feet deep. It was noticed that all those who used the spring water escaped the disease while those who depended upon the shallow wells were stricken down. In all, there were many hundred cases and about forty deaths. I secured some of the water from these shallow wells and with it experimented upon a number of cats, finally obtaining the result which I announced to the Board of Health."

If, as Professor Vaughn states, these city wells contain fever germs enough to kill a cat, with its traditional nine lives, what chance is there for an ordinary human being with only one?

In some towns the well water has grown so notoriously bad from sewage pollution that the people have been driven by sheer necessity to bring in a supply of pure water by suitable

water works, and still no steps are taken towards constructing sewers.

It is not sufficient to simply bring water into a town, provision must be made for carrying it out again. Water is the great scavenger. It purifies the air by falling through it. It cleanses our houses, our clothing, our food, and ourselves, and having once been soiled it must be carried away again. In doing this it may be made the vehicle for carrying away other refuse which must be gotten rid of. There are many cities which have provided themselves with an abundant supply of water, but have made no provision for disposing of it after it has been loaded with filth.

Increasing the water supply without providing for its outflow after it has been fouled, only makes a bad matter worse. The number and size of the cess-pools must be increased. Instead of draining the soil, as common sense would dictate, additional water is poured into it by the millions of gallons, and year by year the soil is more thoroughly soaked with sewage. The streams of filthy water which may be seen running in the open drains, leading from back yards into the streets, tell a story which all can read, and the effects of this state of affairs can be plainly seen if the Health Officer makes full reports.

One of the twelve tasks imposed upon Hercules was to cleanse the stables of Augeas. In these stables vast herds of cattle had been kept for many years, and they had never been cleaned. He accomplished the task by turning a stream of water through them. This famous exploit—"cleansing the Augean stables"—is repeated over and over again wherever abundant water supply is supplemented by thorough

sewerage. Had Hercules only planned to bring the water into the stables and made no provision for its outflow, the project would have been a miserable failure, and the sensible people of that day would have called Hercules a fool; and yet there are cities even in this enlightened age where such a plan is pursued.

An examination into the sanitary condition of a majority of our cities and villages will show their great need of sewerage. The earth upon which they stand is literally saturated with sewage. The vile odors which are exhaled from the polluted soil and from the sinks of rottenness and putrefaction which it contains, contaminate the air, and are a constant reminder of the need of an efficient remedy. There they stand reeking in the accumulated filth of past generations, never for a day free from malaria and zymotic diseases; and yet the remedy is easily applied and its cost within the reach of the poorest hamlet.

The first point in this paper—the necessity for sewers—is the easiest one to prove to the satisfaction of physicians and persons familiar with sanitary matters, but it is by far the most difficult one to prove to the satisfaction of the voting majority in any community. "None are so blind as those who won't see;" and as sewerage is synonymous with taxation to the average householder, he will absolutely refuse to see its benefits. Nothing which savors of taxation can from his point of view be proven to be desirable. The sanitarian may declaim about "pure food, pure water, and pure air," and show the necessity of these in order that the health of any community may be preserved; and so long as he keeps in the region of pure theory, he

will be listened to respectfully if not attentively. But once let him try to make a practical application of his theory in any community, in such a way as to disturb the existing status, however bad it may be, and good-natured indifference will immediately give place to active hostility. Attempt to carry out any sanitary reform which costs anything, and you may count upon the most determined opposition. Health or sickness is uncertain, and the chances may be taken, but money is certainty itself—that must not be tampered with.

The beneficial effects of sewerage is proven by abundant statistics.

A marked decrease in the amount of sickness, and a lowering of the death rate always follows the construction of a system of sewers, which acts efficiently in carrying away the sewage and drains the soil. In some cases the death rate from pulmonary diseases alone has been reduced fifty per cent. and in others, the death rate from fever has been reduced eighty per cent.

I need not refer to these statistics in detail as undoubtedly the members of this society are familiar with them. I will, however, refer to one case reported this year by the Health Officer of a city, secured under my direction in 1884. The report says :

“I remark this fact : in 1883 twenty-six deaths occurred from typhoid fever ; 1885, eighteen deaths occurred from the same cause ; 1887, five deaths are recorded as produced by typhoid fever. More deaths in 1883 than cases in 1887. The inference is easy.”

H. C. VAN ZANT, M. D.
(*Health Officer Schenectady, N. Y.*)

This brings us to the second point—the cost of sewers.

One of the principal reasons why the construction of sewers has been so bitterly opposed in many places, and is often so long delayed, is that in so many cases they are made needlessly expensive.

Sewers are often made large enough to carry the storm water when they are not at all needed for that purpose. The cost is thereby increased from three to ten fold, while their efficiency as a conduit for sewage is very much decreased.

In order to decide what kind of a sewer is best, it will be well to first determine what is required.

A sewer should carry rapidly all of the sewage to its outfall, so that no time would be given for decomposition.

In the combined system of sewers, that is, sewers designed to carry the storm water as well as the sewage, the size of the sewer is determined by the amount of storm water to be provided for ; the amount of sewage being so small in comparison that it is not necessary to take it into consideration.

In such a sewer the ordinary amount of sewage is very small in comparison to the size of the sewer, and the stream is shallow and sluggish.

The sand and rubbish, carried into the sewer during storms, form small dams, holding the sewage in pools. This stagnant sewage decomposes, and the sewer becomes a manufactory of sewer gas on an extended scale, and the gas pours out of the man-holes and street basins into the streets ; and through empty traps and leaky pipes into the houses, carrying disease and death in its path.

In the separate system of sewers, that is, sewers from which the storm water is excluded, the size of the sewer is determined by the amount of

sewage to be provided for, and hence such sizes may be chosen as will best answer the object in view—the rapid disposal of sewage.

By thus limiting the size of the sewer to what is necessary for the service required, we not only gain in efficient working, but materially lessen the cost.

Very erroneous notions are quite generally held regarding the necessary size of sewers. I have seen drains for private residences made large enough to carry all the sewage of a city street a mile long.

To illustrate the carrying capacity of sewer pipes, let us suppose that the lots on a street are forty feet wide; that there is a house on every lot; and that each house contains an average of five people. Allow two barrels of sewage per day for each person. An 8-inch sewer, laid on a grade of one foot in a hundred, will carry more sewage than would be discharged from a row of houses two miles long under the above conditions.

A sewer small enough to secure a proper depth of flow is much less liable to stoppage and clogging, than one in which the flow of sewage is shallow and sluggish; and it is evident that the important matters of ventilation and flushing can be much more easily and effectively attended to in a small sewer than in a large one.

In some cases storm water conduits may be necessary on the principal streets. These may usually be short, and may empty into the nearest water course—even within the town—where an outfall of sewage would not be admissible. They need not be placed far beneath the surface, and will cost much less than a combined sewer. In any case the length of storm water

conduits will be very short in comparison with the system of sewers, and in a majority of cases none will be needed.

Perhaps the best way to give an idea of the actual cost of separate sewers, is to give the contractor's prices for construction in two towns for which I have designed sewers. The following list of prices is taken from the contracts for building sewers in Schenectady and in West Troy, N. Y.:

PRICE PER FOOT FOR EXCAVATING AND
BACK FILLING.

	Schenectady.	West Troy.
Under 6 feet,	\$.13	\$.14
From 6 to 8 feet, . . . . .	.20	.18
From 8 to 10 feet, . . . . .	.30	.22
From 10 to 12 feet, . . . . .	.40	.25
From 12 to 14 feet, . . . . .	.50	.40

PRICE PER FOOT FOR FURNISHING AND
LAYING PIPE.

	Schenectady.	West Troy.
Eight-inch,	\$.19	\$.23
Ten-inch, . . . . .	.26	.33
Twelve-inch, . . . . .	.32	.40
Eighteen-inch, . . . . .	.55	.76

There are over thirteen miles of sewers in Schenectady, of sizes varying from eight to eighteen inches in diameter. The actual cost of construction averaged about 70 cents per foot for the whole work. This would be 35 cents per foot on each side of the street.

Suppose a man's lot has a frontage of 30 feet. Then at the above rate the sewer would cost him ten dollars and a half; about what a well-built cess-pool would cost.

If the cost of the sewer were funded at 4 per cent. it would cost him 42 cents a year.

Surely there are very few men so stupid—so blind to their own interests and comfort—as to store filth close to their houses—literally under their noses—when they can get rid of it with so small an outlay.

All that it needs is a better under-

standing of the necessity for sewers ; and a knowledge of the adaptation of the separate system to the needs of a large majority of our cities and villages, in order to secure a great improvement in their sanitary condition.

The separate system of sewers is no new, untried experiment. It has been in use about half a century ; is in successful operation in scores of towns in this country and in England ; and is growing rapidly in popularity as its merits become better known.

No one need accept it upon trust. It is in use in so many sections of the country, that one need not go far to see it in operation, and know for himself how efficiently it performs its work.

THE RELATION OF THE WORK OF THE SCHOOL TO THE HEALTH OF THE CHILD.*

BY PROF. E. A. JONES,
Superintendent of Instruction, Masillon, Ohio.

The province of the Public Schools has been of late the topic of several able papers and the subject of many learned discussions.

A series of articles has recently appeared in one of the leading magazines of this country on "What the Public Schools should teach." These articles were prepared by Bishop Gilmour, Dr. Austin Flint, Rev. J. M. Savage, Prof. W. T. Harris, and others—men of acknowledged eminence in the different professions, and supposed to look upon the subject from different standpoints.

"In order to the common weal, there are, in general, four things that an adult-man or woman ought to know,

therefore, says one of these writers, there are four things that the state ought to see that its children have a fair opportunity to learn, viz.: to think, to work, to behave, and to love their country."

Another declares that "individual self-support, an intelligent ballot, and morality, are the foundations on which the public welfare must rest : and consequently these are the chief ends to be sought in a system of public education, supported by public money."

"Education is such a development of faculty as makes one master of himself and his condition."

Herbert Spencer, the Philosopher, in considering the great aim of education says : "To prepare us for complete living is the function, which education has to discharge : and the only rational mode of judging of any educational course, is, to judge in what degree it discharges such function."

The nature of man is three-fold. He has a body to be cared for, and a mind and soul to be educated and trained. A true education seeks the harmonious development of the entire man. From whatever standpoint we may look at this subject, we shall be forced to admit that the development of a sound and vigorous body as a result of the education of our youth, is of the first and highest importance. That man or woman is poorly prepared for individual self-support who is continually hindered by pain and sickness.

A sound and vigorous body is a great help to clear thinking and sound reasoning, and a great incentive to right action. An enfeebled constitution is a poor preparation for the race of life, and a great hindrance to good citizenship. Germany with her large standing army, ready at any moment for

*A paper read before the sixth annual meeting of the Ohio State Sanitary Association.

action, either aggressive or defensive, realizes the importance of physical training, and the gymnasium constitutes an important part of her school system.

She knows that the safety of the Empire may depend upon the physical endurance of her soldiers, and she aims to give them the best possible mental training. While the same argument does not hold in full force in reference to our own country, yet, is it not true that the state has a right to expect in return for the money expended upon her public school system a citizenship composed of men and women possessing vigorous and healthy bodies, as well as disciplined minds and a strong character. How much is lost to society and the state every year by reason of physical weakness and disease.

Prof. Tyndall, in speaking of health once said very forcibly, "There have been men, who by wise attention to this point might have risen to eminence : might have made great discoveries : written great poems, commanded armies, or ruled states—but, who by unwise neglect of this point have come to nothing. Imagine Hercules as an oarsman in a rotten boat : what can he do there but by the very force of his stroke expedite the ruin of his craft." Health is a priceless boon. When once we are in possession of it no effort or care should be spared in its preservation. When lost it may never be regained.

In one of Mr. Emerson's Essays, he says : "Get health. No labor, pains, temperance, poverty, nor exercise that can gain it must be grudged, for sickness is a cannibal which eats up all the life and youth it can lay hold of, and absorbs its own sons and daughters."

When we consider what inroads are made upon the happiness of man by

reason of pain and suffering :—What limitations are placed upon his work on account of physical weakness and disease, which might have been in a great measure prevented by proper hygienic instruction in the home and in the school, we shall realize more fully the importance of this subject.

Alexander Bain, of Aberdeen, Scotland, in his "Education as a Science," published in 1878, makes the following statement : "The art of education assumes a certain average of physical health and does not inquire into the means of keeping up or increasing that average."

Would it not be well if inquiries were made in this direction, and persistent efforts put forth not only to maintain the average physical health but, also, to increase that average. In 1887 the London School Board appointed a special committee to consider the present subjects and modes of instruction in the Board's Schools, and to report whether such changes can be made as shall secure that children leaving school shall be more fitted than they now are to perform the duties and work of life before them.

The committee was a representative body, comprising educators, experts, scientists, men of affairs, clergymen, and women, and their report was one of the most complete that has ever been presented. The defects specially noted are—"The neglect of the physical or bodily side of education, including the development of muscular strength, of the accuracy of the eye, and the sense of color, and of proportion, and of the pliancy and dexterity of the hand.

The excessive cultivation of the memory to the neglect of general intelligence, and the absence from the

curriculum of anything that ennobles labor."

In considering the relation of this work of the school to the health of the child, it is essential to look at the circumstances under which that work is performed, as well as the nature of the work itself.

Work under favorable conditions injures no one. On the contrary, close mental application, when not continued for too long a time, and when accompanied with proper physical exercise, is conducive to health and longevity. It is work under unfavorable conditions of body and surroundings, and sometimes too long protracted, that injures. Tasks assigned in advance of the age and capacity of pupils, result unfavorably. The attempt of some pupils to make up for past negligence and indolence, by doing in two days the work of two weeks, leads to that high mental pressure and nervous strain which is so detrimental to health, and which has led to so much unfavorable criticism of our public school system. It is the glory of our Republic that it furnishes to all alike, the rich and the poor, the native and the foreign born, the advantages of a good education. The children come to us from all classes and conditions of homes; the educated and the ignorant: the cleanly and the untidy: the strong and healthy, and the physically weak and diseased, and the great problem set before us is to take these children in masses and train them one and all for good citizenship. One of the very first requirements is a place in which this work can be carried on.

The situation, construction, arrangement, and furnishing of the school-house is a very important matter and should be determined with reference

to convenience of location, drainage, light, and other sanitary considerations, rather than the individual interest of some property holder, or any purely financial reasons.

In the past decade a great improvement has been made in the heating, ventilating, and lighting of our school-rooms. In many of our towns and cities the different school-houses that have been erected during this period mark the steady advance that has been made in sanitary science.

But with all our modern appliances the constant watchfulness of the teacher is necessary. The curtains or shutters must be adjusted at different times in the day in order that a proper amount of light may be admitted; the thermometer must be properly placed and *frequently consulted* lest the atmosphere be over-heated; and the teacher must occasionally repair to the hall and breathe the fresh air in order that she may rightly judge of the quality of the air her pupils inhale. If the means provided for ventilation be not sufficient, then other means must be resorted to in order that the vitiated atmosphere may be removed, and fresh oxygen be introduced.

The teacher should have some knowledge of sanitary matters, and should exercise a constant watchfulness over the health and physical bearing of her pupils. One of the greatest difficulties we have to contend with at the present time is the overcrowding of some of our school-rooms. Rapidly growing cities find it extremely difficult to provide sufficient school accommodations. Sixty, seventy-five, and even one hundred pupils are crowded into a room originally designed for forty-five or fifty at the maximum.

No ventilating appliances, and no

amount of care on the part of teachers can provide a healthful atmosphere under such circumstances.

Far better would it be in such a case to divide the school into sections and allow one-half to come in the morning and the other in the afternoon. In this way the health of the pupils would not be jeopardized, and better work would be secured. Any one who has spent much time in the school-room will readily admit the fact that the position which scholars assume during school-hours has an important influence upon their physical development and does much to prepare the way for future health or sickness.

Pupils are apt to sit much of the time in a cramped position. In slate and tablet work they lean forward upon the desk, and, as a rule, incline more to one side than to the other.

In course of time this becomes a fixed habit, and we have as a result the round shoulders—one shoulder permanently higher than the other, and the contracted chest. The frequent admonition and persistent watchfulness of the teacher are needed to secure a healthful position while engaged in study and recitation.

Much assistance may be gained by a proper seating of the room. The desk should be suited to the *size* of the pupils. It is not essential that a desk should be manufactured for each individual pupil, but it is necessary that there should be as many different sizes of desks in every room as will comfortably accommodate, with feet easily resting upon the floor, all the scholars in that room: and, however carefully this may be done, the next class, or the next term may require a rearrangement. If, as sometimes happens, certain desks are unfavorably located with

reference to light, or for other reasons, frequent changes should be made so that one set of pupils will not be required to occupy them for any great length of time.

Pupils with defective vision should have the most favorable position in the room with reference to light.

The scholars' desks in common use have but slight inclination, and seem to favor an unhealthful position. I believe it would be an improvement if the school-desk was so constructed that the top could be placed at an angle of 40° or 45° for reading, and 20° for writing, for the normal eye, and could be easily adjusted to the proper angle for the defective eyes.

Two or three years ago such a top was placed upon one of our desks, to accommodate a pupil with defective eye-sight and it has proved very satisfactory.

Much has been written, of late, about the effect of student life upon the eye-sight. The eyes of large numbers of school-children in Germany, Denmark, Sweden, and the United States have been examined with somewhat startling results.

Dr. Calhoun, writing in 1881, says, "So far as I can gather, these are the records of the examinations of the eyes of about 45,000 school-children, of all ages and of all grades, representing both white and colored races, and both country and city schools. Some of these investigations would lead us to conclude that the percentage of normal-sighted, others that the percentage of over-sighted children prevailed in the largest degree, but all, without a single exception, prove beyond a doubt that near-sightedness, beginning perhaps at nothing in the lowest classes, and first years of school-life, steadily increases

from class to class until in the highest grades, or in the last years of school attendance, it has actually developed itself in as many as sixty or seventy per cent. of all the pupils."

Dr. Conrad found among German school-children of nine years, 11 per cent. of myopia; at eighteen it increased to 55 per cent.; and at twenty-one years to 62 per cent.

Dr. Loring found among American children of corresponding ages 3.5 per cent., 20 per cent. and 27 per cent. In the early part of last year, Dr. Allen examined the eyes of 4,700 pupils in the Columbus schools. He found 1,175 cases of one or two defective eyes—25 per cent of the number examined. He reports the increase in the prevalence of near-sightedness from 0 per cent. in the D Primary to 13 per cent. in the senior class of the High School.

If this state of things exists in all our schools, and the work of school is in any way responsible for it, it certainly behooves us to inquire diligently for the cause, and to make every possible effort to apply a remedy.

"Heredity and occupation are two principal causes of this defect of vision," says one writer on this subject.

Heredity seems to give rise to a tendency to near-sightedness. This is clearly shown in the case of the Germans, among whom this trouble exists to a remarkable degree. In an examination of the children of some of the public schools of New York, Dr. Loring found that among those of German parentage, 24 per cent. were near-sighted; those of American descent showed 19 per cent.; and those of Irish parentage had only 14 per cent.

In an address to the teachers of Massachusetts, Dr. Williams attributes the principal cause of these near-sight-

ed changes to the long continued use of the eyes on near objects during the years of most active bodily development—say from twelve to eighteen. This seems to be clearly shown in the examinations referred to. The country schools show a very small per cent. of myopic eyes.

In Germany where much more work is required of students than in our city schools, the per centage is the highest, reaching 59 per cent. in the Universities.

In Berlin some high school classes have thirty-three hours a week of home lessons. In a paper read before the Nat. Ed. Association a few years since the writer, Dr. Calhoun, makes the following statement:

"In the school-room there are two kinds of influences that work injuriously upon the eye-sight. Under the first are classed all those things which compel the eye to strain itself in order to see distinctly small letters or objects.

Under the second all those which cause a congestion of, or rush of blood to the head and eye. To the *first* belong bad ventilation and improper light, too small and imperfect type, pale ink, many successive hours at the same kind of work, as in reading, writing, sewing, etc., without change or rest of the eye, and all sorts of toil causing the use of the eye until late in the night, and sometimes with very defective light.

To the second belong not only the things just enumerated, but also the construction and arrangement of school desks and benches, which in many schools make it next to impossible for pupils to hold their bodies in proper position for any length of time."

So far as I know we have no statistics showing the condition of the eyes of school children in this country twenty-

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"THE ANNALS OF HYGIENE"

caused to be purchased in the open market, and to have examined, all the bottled beers offered for sale in Philadelphia.

The analyses were made by Dr. Henry Leffman, Hygienist and Food Inspector of the Pennsylvania State Board of Agriculture, and L. Wolf, M. D., Jefferson Medical College, and their detailed reports, published in the November and February numbers of "*THE ANNALS OF HYGIENE*," the official organ of the State Board of Health, shows that both the Munich and Vienna Beer of the Germania Brewing Company are

POSITIVELY FREE FROM SALICYLIC ACID,

and concludes as follows:—

"The practical meaning of the two reports, which we have published, is that the '*Vienna*' beer, made by the Germania Brewing Company, of Philadelphia, is the best of all the bottled beers now offered for sale, and approaches more closely to the standard of an ideal beer than any other on the market."

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five and fifty years ago. If we had such tables it would be interesting to compare them with present results and to ascertain to what extent this evil is on the increase.

As far as *school* is concerned it would seem that much has been done in the past few years to counteract this tendency. Great improvements have been made in the heating and ventilation of our buildings. Our rooms are better lighted both as regards the quantity and the direction of the light; our textbooks are printed on better paper and with much better type; and a variety of exercises have been introduced so that the eye is not confined to any one task for a long time without a period of rest.

On the other hand, outside of the school there is much to increase this tendency. Books and papers have been multiplied; much more general reading is done by the youth of the present generation than in former times. Many of these books and periodicals are printed on inferior paper and with fine type, notably some of the newspapers of the present day. Much of the reading at home is done at twilight, or by insufficient light. A boy is much more apt to confine the eye to the printed page for two hours at one time in reading *Montana Nat*, *The Ghouls by the Sea*, or some story in which he is intensely interested, than upon the text of any lesson assigned at school.

Says a recent writer on this subject, "Of what use are these proper arrangements at school, if as soon as the children get to their own homes, they write and study at tables that are inconvenient even for grown members of the family. Of what benefit is the most superb illumination of the school-room, if the children when at home

work several hours of the day in a badly-lighted chamber, and at night by the light of a flickering lamp, used perhaps by five or six others of the family and which is insufficient to properly light up the book or map of even one or two of the children." In seeking for the cause of this defect, let us take into account the *entire life* of the child and not place an undue share of the responsibility upon the public school.

This is a matter of great importance to parents and to educators, and especially to the present and future generations. Let farther examinations be made. Let the investigations already begun go forward as rapidly as possible, and as we are able to satisfactorily determine the causes, let us faithfully apply the remedy, however it may interfere with our present curriculum.

"All knowledge of books comes to us through the eyes, and it is of the greatest importance to the teacher and to the scholars to use every effort to protect the eyes from injury and to increase their influence." The amount of brain-work required of the children in our public schools, during school hours and in home study, has an important bearing upon the health of the child and demands the careful consideration of boards of education, parents, and educators. The following extract is taken from the report of the Commissioner on Hygiene to the Boards of Education in the City of Columbus, for 1887. "Your Committee most respectfully call your attention to another subject of probably more importance than any other connected with public education. We refer to the over-taxing the minds of school children, familiarly known as the "cramming process." The effects of the pernicious

system are simply deplorable and in conjunction with the rush and worry of after life is rapidly making a nation of invalids." Several articles have recently appeared on "Over-work" in our public schools, "High Pressure," etc., and there seems to be a very general impression that this evil exists. Some interesting examinations have recently been made in Denmark and Sweden in reference to this matter. Dr. Hertel of Copenhagen sent printed forms to be filled out for each school by both teachers and parents. The points on which inquiry was made, were the age and class of the pupil; the number of hours of school-work; and the time employed at home in preparation; the amount of written exercises to be done at home; whether the pupil had any difficulty on the whole or in any particular subject; his state of health; the hour he went to bed and the number of hours' of sleep he had. The teacher was also requested to state whether the pupil was one of the best, middling or dullest in the class. The information in regard to the boys' school was taken from 14 schools having the classical and modern sides, and included 3 of the largest preparatory schools. The 14 schools had a total of 3,141 boys, of whom 1,900 were healthy, 978 were sickly, and 263 were called non-returned. The percentages were—healthy, 60.5; sickly, 31.1; non-returned, 8.4.

On entering school the conditions were—healthy, 74 per cent.; sickly, 18.4; non-returned, 7.9.

The hours of work at school and in home preparation were 4.6 hours in the lowest mixed class, and rose to 7.7 in the highest. In the classical division the increase was from 8.2 hours in the lowest to 10.4 in the highest.

While I admire the purpose for which these investigations were made, and the patience and care with which the results have been tabulated, I cannot but feel that they are unsatisfactory as far as fixing the responsibility of the work of the school for the physical weakness indicated. In these days there are so many influences, outside of the school-room, that tend to impair the physical vigor, weaken the intellect, and destroy the souls of our youth, it becomes an exceedingly difficult task to estimate the exact per cent. of injury that may be attributed to our public school system.

Before reaching a decision in reference to this matter of over-work, let us inquire as to the amount of time actually devoted to study in our schools.

The school hours are usually from 9 A. M. to 12 M. in the morning, and from 1.30 to 4, or from 2 to 4 P. M. in the afternoon. In the forenoon one-half hour is consumed by the opening exercises and recess. In the afternoon there is a recess of fifteen minutes, or, in the case of a two hours' session, an exercise in gymnastics of ten minutes.

This reduces the time for actual school work to four and one-half hours.

Really two hours of this time are devoted to writing and oral recitations.

The pupils then are engaged in actual study not more than two or two and one-half hours of each day, and this is usually divided into intervals of forty or forty-five minutes each.

Even if we add to this one hour of home study for pupils in advanced grades, can this amount of work prove disastrous to the health of the average child?

It may be that in the introduction of special branches, such as drawing, music, elocution, German, etc., into some

of our schools, there has not been enough of the other work eliminated; for while these special studies may not require as close application, they take the *time* that was formerly devoted to the other subjects.

The work required should certainly be adapted to the *age* and *physical condition* of the pupils.

Scholars in the lower grades should not be confined in the school-room for as long a time as the more advanced pupils, and should have more frequent intervals of rest. The attention of pupils in the lowest grades should not be confined to their work for more than twenty or thirty minutes at any one time.

The amount of work required should be gradually increased from grade to grade.

No home study should be required in the first year of school life.

Scholars in the more advanced Grammar and High School grades will not, as a rule, be injured by an hour of work at home in connection with their lessons.

Such an arrangement will be far better than to spend the evening in a profitless manner at home, or upon the street in the school of vice.

Too much stress should not be placed upon examinations so as to produce worry and undue nervous strain on the part of the pupils. The daily work and conduct of the scholar, the written test, and the judgment of the teacher as to his ability to do the work of the next year should determine his promotion.

A large share of the nervous strain, about which we hear so much, is due to irregularity in attendance, a neglect of the work of each day, and a subsequent attempt to do in two

or three days the work of a month.

It may also be noted, that, we are living in a time of intense activity—the age of the telegraph, and the telephone—the lightning steamship and the thunderbolt express train; it would be strange indeed if the public school did not feel to some extent the influence of this spirit of the age.

Physical exercises should be introduced into all our schools as a part of the *regular daily* programme.

Properly conducted, these would do much to correct some of the evils noted. They would rest the eye, relieve the nervous strain, enlarge the chest, and tend to promote an erect and easy carriage of the body. At the same time an opportunity would be afforded for the introduction of fresh air into the room without danger to any pupil.

Special instruction in hygiene, and the general principles of sanitation, should be given in all the grades of our public schools. In the larger cities a special teacher of hygiene might be employed to good advantage, to give instruction to the teachers and normal classes, and to have general supervision of all the sanitary arrangements of the school.

I know of no better way by which the important facts and principles of sanitary science can be disseminated than through the public school; and certainly there is nothing of greater importance to a community than the preservation of health and the prevention of disease, "To guard is better than to heal—The shield is nobler than the spear."

A CASE of Cocaine Poisoning has recently occurred in San Francisco. It seems that the sufferer took the drug without medical advice. The man was taken to a hospital, where he recovered.

HEALTHFUL HOMES.*

By GEO. G. GROFF, M. D.

Lewisburg, Pa., member of the State Board of Health of Pennsylvania, and Acting President of Bucknell University.

The apostle of English sanitation, Mr. Chadwick, has said, "Let me build the houses, and I can determine the ages at which the people shall die." This is probably an extreme statement, for there are many elements outside the house in which we live which go to determine the length of our lives; but in our benificent land, with its salubrious climate, if the house is what it should be, and men and women exercise common sense and judgment in reference to matters of health (which the majority do not do), there is no reason why people should not, almost uniformly, live to be 70, 80, and even 100 years of age; at least, in country places, this should be attained.

If our homes and their surroundings were more healthy, *consumption, rheumatism, typhoid fever, measles, diphtheria, scarlet fever, whooping cough, malaria* and a host of other diseases, to which we are now subject, would almost disappear. That care will do much to lengthen human life, we make statements from tables of

VITAL STATISTICS.

The death rate in the *Peabody build-ings*, London, is 16 7-10 per 1,000 per annum. Immediate vicinity, 30-40 per 1,000. The whole city of London, 23 4-10 per 1,000.

In Great Britain, only 4½ per cent. of all the deaths are *natural*, i. e., not premature.

In the United States, in 1881, in 66

towns, 4,169 persons died of *small-pox*, a preventable disease.

Prof. Chandler, of New York city, says that 15,000 children die in New York and Brooklyn yearly of *preventable diseases*.

In Rhode Island, according to a late report of the Board of Health, 600 natives and 1,200 foreigners died of consumption yearly, but the native population is more than double the foreign.

In a certain town in Pennsylvania, the average death among the Friends (Quakers) is 60, while among a large colored population it is only 20, and in many places in our country the death rate among colored people is nearly double that among the whites; in Richmond, Va., it is 21 for the whites, 38 for the blacks.

COST OF UNNECESSARY SICKNESS.

In 1876 Dr. Bowditch, of Massachusetts, made a careful estimate of the cost to the people of the United States on account of unnecessary sickness, and he placed the figures at \$100,000,000. Later Dr. Kellogg, of Michigan, has made a careful estimate and places it at \$300,000,000. This makes a yearly loss of \$6,461,000 to the people of Michigan, and \$17,200,000 to those of Pennsylvania, and no account taken of the physical suffering or of the mental pain and anguish from the loss of dear ones prematurely called away.

THE ESSENTIALS OF A HEALTHFUL HOME.

Pure air, abundant sunlight, dryness, and an exhaustless supply of pure water and cleanliness everywhere are the essentials of a healthful home. None of these are ever to be lost sight of, either in the new home, nor in the ancestral mansion which has for gene-

* A lecture delivered at the Sanitary Convention in Lewisburg.

rations passed from father to son. How shall these be attained? The reply is often made at this point, "You are speaking of needless extravagance. These things cost money." It is true. But are not funerals, too, expensive? The prudent man foreseeeth the evil and hideth himself, but the foolish passeth on and is punished."

THE SITE.

For a house should receive careful attention of the tenant, purchaser, or of one proposing to build. A good site may mean life and happiness, and a bad one *disease, suffering and death.*

1. It should be dry; avoid, as you would death, a damp location. In a town or city, carefully ascertain whether or not it is on "*made ground.*" Avoid it. Avoid ground underlaid with clay for it will always be damp.

2. Elevated on a hillside or gentle knoll, never in a hollow. The hillside is warmer and drier than the hollow.

3. Not close to a swamp, slow river; milldam, or land which is overflowed a portion of the year, nor in such a place that the *prevailing* winds will bring to the house pestilence from a milldam, etc.

4. In as good neighborhood as possible, away from factories, saloons, etc., and near schools and churches.

5. In a village or town, build on as large a lot as possible, thus securing air and sunlight. Build back from the street, thus avoiding the dust of the dry season and the curious gaze of every passer-by. Secure a yard in which trees and plants will furnish both exercise and health.

6. In the country build back from the highway, giving an abundance of room for trees and shrubbery about the

house. Do not select a place where your family will be isolated from all social intercourse, so necessary to health of mind and body.

THE ASPECT.

Let the house be so placed that it will receive the most *sunlight* and *fresh air*, especially from the summer winds. Avoid, even if offered rent free, a *damp, dark* house, with no chance for the free air of heaven to sweep through it.

If the house is only one room deep, it does well to face it to the south or south-west; but if it is two rooms deep, those on the north side never receive any sunlight, and are apt to be damp. For a double house it is best to face it to the east. Then the morning sun will warm up the front and the afternoon's sun the rear of the house, and thus all the rooms will be bathed in light and warmth. *The living rooms should always be warmed by the morning sun.* This hint is worth a great deal as a health matter. For when the sun cannot enter the doctor must enter. If the cold winds from the north and west are severe in the winter, they may be broken by a cluster of evergreen trees planted on those sides. In country places a good aspect should be secured without reference to facing the house square with the street. The writer has recently erected a house of fourteen rooms, all of which face either the south or west, except two hall rooms and the bath-room. The engraving shows how this is accomplished. The diagram gives the first floor. The second and third floors follow the same general plan. No attempt is made to give correct proportions nor details. The living rooms are all on the south, while hall and kitchen effectually protect them from cold winds.



THE DESIGN.

In building a new house, or in the selection of an old one, let the design be as *simple as possible*. The house should be *durable, convenient, well lighted, well ventilated* and as large as the means of the occupant will warrant.

A mean house must always tend to degrade its occupants, while a good one tends to elevate them. Where there are children, this is of much importance. We read of great men born in log cabins, but they did not stay there long. A laboring man *content* to remain with his family in a hovel is generally a hopeless and irreclaimable man. Persons well to do are often careless and thoughtless in this matter. A *respectable, well-kept* house is a *great educator* of the young. Too much attention cannot be paid to making houses convenient for those who do the work in them. The pantry, the well, the cistern, the wood-house, the coal-bin, should be on the same level and as close to the kitchen as possible. Every possible step should be saved those whose work is never done.

THE FOUNDATION.

In building a new house the foundations should be laid with great care to produce dryness of the walls. In a damp soil a drain of tiles should be laid entirely around the foundation walls, with free openings for discharge. The walls should be laid in Roman cement or in asphaltum so that no moisture will be transmitted. They should be double, with an air space between them, that no moisture from the earth adjacent the outer wall be transmitted to the cellar, and as a final precaution a little distance below the first joist a water-proof layer of slates should be imbedded in cement or asphaltum, to

prevent the rise of moisture into the walls above. Ordinarily a good deal of water may be kept out by packing clay against the walls on the outside to the very bottom of the foundations.

Avoid a house with damp, musty, mouldy foundation walls.

THE WALLS.

These may be of *wood, brick or stone*, whichever is most convenient; all are good, if properly used. Let all walls be made double, with an air-space between them. This will make the house much warmer than otherwise. All brick and stone walls should be lathed and plastered on the *inside* to keep out cold and dampness. This precaution will cost only a small part of the inevitable doctor's bills, if omitted. Wooden walls should be painted on the outside for protection and effect. Brick walls are also much warmer and drier if painted, but they are not so pervious to air as when unpainted. An ordinary brick can readily absorb one pound of water in a dashing rain storm, and much of this will pass into the house. Stone walls should be 'dashed' or well 'pointed' to keep out rain and dampness.

THE CELLAR.

This is generally the greatest source of danger about our homes. A damp and dirty cellar means generally plenty of *rheumatism, pneumonia, pleurisy, colds, consumption*, and diseases of children in a virulent form. So dangerous is the cellar considered to be that some sanitarians, as Dr. Richardson of London, advocate their entire abolition, and that an *airtight* and watertight pavement be placed between the house and earth. An excellent plan is to have the cellar half above ground, thus ensuring light and air

in abundance. Every farmer should have a cellar under barn or wagon-house in which to store roots, etc.

The man who cares for his family should see that the cellar floor is laid in Roman or asphaltum cement, so as to entirely exclude water from below. It should be dry, well ventilated, open to sunlight, clean, well whitewashed several times a year. Remember that *foul air in the cellar is sure to find its way all over the house.*

Many families who wonder why it is that one of their children is always sick, could discover the reason by going into the cellar. Dr. R. C. Kedzie, of the Michigan Agricultural College, thus speaks ;

"Go down into the cellar and examine the foundations of life ; see whether the cellar is dry and well ventilated, and air sweet and wholesome ; that no vegetables and useless rubbish of any kind are left to rot in your cellar. Or do you find all kinds of things going to decay, the cellar wet, the walls slimy, mould spreading over everything, and a close, stifling odor pervading the air of your cellar ? If these inanimate things could give voice to their warning, what a sound would startle our ears in hundreds of cellars in our State ! 'Here lies in ambush diphtheria and membranous croup, the destroyers of childhood, and typhoid fever, that strikes at all ages : here lurk the seeds of consumption to bring forth the slow but sure harvest of lamentation and woe !' 'For the stone shall cry out of the wall, and the beam out of the timber shall answer it.' But though these voiceless things speak no word of warning, they hang out the flag of danger ; the spotted mould and fungus attacking the timbers of your cellar show that destructive agencies

are at work. Why, man ! death is knowing the very sills of your house, and shall he spare these tender morsels, your children ? These damp, musty, mouldy cellars are the seed beds of disease. Do not hope to preserve health over such a charnel house. Do not leave vegetables to rot in your cellar to spread rottenness through all your house. The wet cellar foretells wet eyes up-stairs ! Drain it, and underdrain the surrounding soil so that your cellar shall always be dry. Drive out all mustiness and mould by ventilation and by *abundant* use of whitewash. Make the air of your cellars at all times sweet and wholesome, because much of this air will find its way into the rooms above. But if you neglect all of these things and the Angel of Death spreads his dark wings over your household, do not charge the effects of your nastiness and laziness to a very mysterious Providence ! 'A prudent man foreseeth the evil and hideth himself, but the foolish pass on and are punished.' The cellar should be as *dry*, as *clean*, as *sweet* as any room up stairs. It should be whitewashed not once a year, but, if at all musty, once a month. Open all the windows and ventilate completely."

DARK CORNERS.

Pantries and passages should receive the same careful attention as the cellar. Mould, dampness and foul smells are never to be neglected. Ventilate every part of the house thoroughly, and if possible almost daily. You cannot afford to keep the spare room and the parlor shut up until they become musty. Sunlight and fresh air are the best disinfectants known, and the cheapest ; where they cannot enter, the doctor will. Especially should the bed rooms and the beds be thoroughly exposed

to the sunlight and air. Bed clothing should be hung over the chairs for an airing at least an hour every morning. Ventilate, ventilate, ventilate. It is much better to have faded carpets and faded walls than faded children. We have been taught to fight dirt, disease and the devil; but rather fight dirt, dampness, darkness and disease, and the devil will fly far away. The healthful home has no closet in which are stored a varied collection of *patent medicines*. The inmates of a healthful home do not believe that health may be thrown away with impunity and then repurchased at any drug store. The drug superstition is one of the most firmly fixed of all superstitions among educated and cultured people. Disease is conquered not by drugs but by correct living. Man was not made to feed upon the wares of the chemist. The man who doctors himself with patent medicines generally has a fool for a patient.

THE LIVING ROOMS.

First. They should *all be fully above ground*. No half-above-ground rooms are usually dry enough for habitations.

Second. They should be on the sunny side of the house and warmed by the morning sun, if possible. Avoid the cold damp rooms of the north side of the house. In the town where the writer lives there seems a strange tendency to live on the north side of the street. In whole streets this is the nearly universal custom. Where a row of closely built houses extends north and south, the back buildings of each alternate house will be much better exposed to the sun than the others, so that the value of these houses is greatly increased.

Third. They should be as full of windows as possible, and these unob-

structed by curtains and plants. Light is life.

Fourth. The living rooms should be the largest and pleasantest in the house. The ceilings of moderate height; eight or nine feet is abundant space overhead. The higher the ceiling, the harder it is to keep the room warm.

Fifth. The floor timbers should be well ventilated, and no bad gases should be arising from the cellar.

Sixth. The walls painted outside (where exposed to rain), and studded, lathed and plastered inside.

Seventh. Whitewashed walls are healthier than those papered, and oiled and varnished floors than those covered with dirty carpets. *In no case is a stone or brick floor suitable for a living room.*

Eighth. Living rooms should all be on the same level in order to save unnecessary steps. Continual climbing is tiresome and unhealthful.

Ninth. The most healthful covering for kitchen walls would be of *glazed tiles*, which could be washed and scrubbed in a thorough manner.

(To be Continued.)

A CODE OF VACCINATION RULES has been adopted by the Board of Health of Columbus, Ohio, in regard to the pupils and teachers in public schools. A system of house inspection has been adopted, and is being carried into effect.

DR. V. C. VAUGHN has just returned from Europe, where he has been studying the causes of diseases. He brings with him over two hundred gelatine cultures of bacteria, mostly from Dr. Koch's laboratory. These constitute the first installment for the new Hygienic Laboratory of Michigan University.

HEATING AND VENTILATION.*

BY FRANCIS C. BODINE, ESQ.,
Architect, Mansfield, Ohio.

In the matter of heating and ventilation, there are a number of things to be considered.

The first I think is the kind of air we shall bring into our houses. We are aware that the air that lies next the ground is more or less contaminated especially in cities. In dry weather it is apt to be loaded with dust, and in any case it is never so pure and fresh as that from higher up. Yet, people usually open a cellar window, and through it draw the supply of air for the house, getting the very worst that can be had. Why not shut up that cellar window, and open one in the attic? There is pure air up there, and it will come down if we give it a chance.

The opening should be on the side of the house facing the prevailing winds, and connected with the furnace in the cellar by a good sized flue. Having obtained a supply of pure air, the next question is how to heat it? Most furnaces now in use overheat the air; it comes through the register hot enough to boil a tea-kettle. (I know a lady who is in the habit of boiling the tea-kettle on the register.) Go into almost any house heated by a furnace and hold a thermometer in the register and you will be surprised to see how the mercury will rise. Think of a person shut up in doors for days together breathing air that has been heated to 180 or 200 degrees.

Air thus heated cannot but lose much of its vitality. I think the most perfect method of heating the air would be by a system of pipes, filled with steam at low pressure, enclosed in a

brick chamber through which the air from out of doors is conducted. By this method there would be no danger of overheating. It would be economical and easily regulated. A house should be so planned that every room would connect with a chimney, and all air conduits and ventilating flues be placed in the chimneys. For dwelling houses it is well enough to place the register in or near the floor. But for schools or assembly rooms, I should place them close to or in the ceiling. The warm air passing up through the room creates a current, setting the air of the rooms in motion.

This current might be so arranged that certain persons would not be always breathing air that had been used by others. If the air is admitted at the ceiling and drawn off at the floor by ventilating registers at different points, we would have a steady downward flow of air supplying every person alike, and passing down after being used to the ventilators in the floor, and so out.

THE NATIONAL COMMISSIONER OF EDUCATION has issued a report upon examinations of pupils for imperfections of eye-sight. Color-blindness is more prevalent amongst boys than girls. Of optical affections the highest per centage is found amongst children of Irish, Swedish and German blood. The lowest amongst those of American, French, Scotch and English extratooon.

LADIES are often much annoyed by excessive sweating in the arm pits. Salycilic ointment, or one of boracic acid (half a drachm of the powder to an ounce of vaseline), is serviceable. Starch powder may be used, and, if needed, a pad of absorbent cotton continuously worn.

*Read before the Ohio State Sanitary Association.

The Annals of Hygiene,

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State Board of Health of Pennsylvania.
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JOSEPH F. EDWARDS, M. D.,

EDITOR AND PROPRIETOR,
224 South Sixteenth St.,
PHILADELPHIA, PA

The State Board of Health is not responsible for anything appearing in this Journal except that which bears the official attestation of the Board.

EDITORIAL.

IS THE PRACTICE OF MEDICINE A FAILURE?

The *Medical Record* asks this question, saying :

"What can be said as to the success of our art in its application to the relief of disease? We exclude, of course, surgery and hygiene, and assume only that the question, "Is medicine a failure?" relates to the application of drugs and other remedial measures to actual disease. We have lessened the number of infective and septic disorders; but, when they attack an individual, are they any more perfectly under control? We refer our readers to the discussion on the mortality from pneumonia, which is asserted to be greater now than it was half a century ago. The mortality from diphtheria, scarlet fever, typhoid, phthisis, is somewhat lower than it used to be, and a vigorous defense of modern therapeutics might be made in connection with these and a number of other common diseases. We must bear in mind, however, that the question is one that must be answered with reference to society in general rather than to the individual. And though we pull many weakly patients through attacks of illness by aid of modern therapeutics, is not the result an increase of invalid-

ism which tends to propagate itself, producing in succeeding generations an oversickly race?

It is quite safe to discuss the question, "Is the practice of medicine a failure?" for, however plainly its inutility may be shown, people will continue to seek relief from bodily ills. Civilized man is bound to marry and bound to be doctored for a very long time to come. All the same, the exact economical value of matrimony and medicine may be the legitimate object of impartial inquiry."

This query, coming from the leading medical journal of America, is truly the most significant item that we have seen for many a long day. In spite of our vaunted progress we do not believe that any more cases of disease (proportionately) are *cured* to-day than were cured by the old-time doctor of the last century. The drug practice of medicine is an art and such it always will remain; it never can be reduced to the accuracy of science, for it does not rest upon definite scientific principles. Hygiene, on the contrary, is a true science, wherein certain definite results always follow, and always will follow, certain definite causes. It is true that this science is not yet thoroughly developed, it is but in its infancy, but we have gone far enough to know that effect follows cause and we are rapidly coming to understand the relation between this cause and effect. It is therefore in the field of hygiene rather than in that of *drug cure* that we must look for the discoveries calculated to benefit humanity.

THE SUPPRESSION OF ADULTERATION.

We earnestly ask a careful and attentive perusal of the proposed anti-adulteration law which we print on page 49. It needs no argument to convince

any thinking person that food adulteration is one of the most heinous of crimes, striking, as it does, at the very vitals of society by insidiously undermining the health of our people. The adulteration of that which we eat is not only a fraud, it is a crime, and a crime of the gravest character. It is high time that some intelligent, efficient and official cognizance should be taken of the terrible extent to which food adulteration has been carried. This bill, originating from a society that numbers among its members some of our most distinguished and highly honored and respected citizens, is worthy of the most careful consideration. Such a bill should become law; will it? Yes; if you, each and every one of you, plainly and clearly indicate to your representatives at Harrisburg that you favor its enactment. Let us beg of our readers not to be inactive about this momentous question, for it is of vital interest to every one of us, who is compelled to eat that he may live. Read this proposed law carefully and if it meets your approval then make it your business to *personally* see your representatives in the Legislature and urge upon them that they vote for its enactment. Let us realize that if public opinion calls for certain laws they will surely be found on the statute books.

A CORRECTION.—In our issue for November, under the caption of "Bad Plumbing in a Doctor's House," we described how the overflow pipe from the house tank was made to enter the soil pipe. We have since been informed that we misunderstood the owner of this property in this respect, for this overflow pipe empties into a separate and distinct drain that has no connection whatsoever with the cess-pool. A

careful investigation of the plumbing of this particular house shows it to be about perfect in every respect. The point that we desired to make still remains that such a condition of affairs as we there described would be very unwholesome, but we are glad to say that such does not exist in this particular house.

NOTE.—In copying the minutes of the last meeting, the name of Dr. Engelman, as among the members present, was accidentally omitted. It is due to him to state that although, as reported in the minutes, his chair was *temporarily* filled by Dr. Edwards, just at the opening of the meeting, he shortly after entered, having previously notified the Secretary that he would necessarily arrive a little late, and presided during all the sessions.

BENJAMIN LEE, *Secretary*.

REMOVAL OF THE ALMSHOUSE.—Apropos of the contemplated removal of the Philadelphia Almshouse, some good, sensible people are asking Councils to donate the site for a public park. This is a wise request and it should by all means be granted. The grounds upon which these buildings have stood for more than fifty years must be so thoroughly saturated with filth and disease that to build human habitations thereon would be the very height of foolish folly. Let us have grass and flowers to purify this foul spot.

A CASE OF SMALL-POX IN OMAHA seems to have aroused not only the Board of Health but the whole population of that city, and vigorous measures are being taken to prevent the spread of the disease.

STATE BOARD OF HEALTH

AND

VITAL STATISTICS,

OF THE

COMMONWEALTH OF PENNSYLVANIA.

OFFICERS AND MEMBERS.

PRESIDENT,

DAVID ENGELMAN, M. D., of Easton.

SECRETARY,

BENJAMIN LEE, M. D., of Philadelphia.

MEMBERS,

PEMBERTON DUDLEY, M. D., of Philadelphia.

DAVID ENGELMAN, M. D., of Easton.

J. F. EDWARDS, M. D., of Philadelphia.

J. H. MCLELLAND, M. D., of Pittsburg.

HOWARD MURPHY, C. E., of Philadelphia.

GEORGE G. GROFF, M. D., of Lewisburg.

BENJAMIN LEE, M. D., of Philadelphia.

PLACE OF MEETING,

Supreme Court Room, State Capitol,
Harrisburg (unless otherwise ordered).

TIME OF MEETING,

Second Wednesday in May, July and Nov.

EXECUTIVE COMMITTEE,

PEMBERTON DUDLEY, M. D., Chairman.

HOWARD MURPHY, C. E.

JOSEPH F. EDWARDS, M. D.

BENJAMIN LEE, M. D., Secretary.

Place of Meeting,

(Until otherwise ordered).

Executive Office, 1532 Pine St., Philad'a.

*Time of Meeting,*Third Wednesdays in January, April, July
and October.*Secretary's Address,*

1532 Pine Street, Philadelphia.

Bureau of Registration and Vital Statistics.

Department of Internal Affairs,

State Capitol, Harrisburg.

*State Superintendent of Registration of
Vital Statistics.*

BENJAMIN LEE, M. D.

SPECIAL REPORTS.

FOURTH ANNUAL REPORT OF THE
SECRETARY OF THE STATE BOARD
OF HEALTH OF PENNSYLVANIA.*

To the HON. DAVID ENGELMAN, M. D. :

*President of the the State Board of Health
and Vital Statistics of the Commonwealth of
Pennsylvania.*SIR :—I herewith respectfully present my
Fourth Annual Report in accordance with
the requirements of our by-laws and of the
Act under which our Board is organized :—Since my last report the Board has held
three regular and four special meetings. The
regular meetings were held November 9,
1887, May 16, 1888 and July 11, 1888. The
special meetings were held November 30,
1887, January 11, 1888, February 29, 1888,
and August 31, 1888.The past year has been one of unusual
anxiety to all those who are charged with
the grave responsibility of protecting the
public health in the United States, and espe-
cially in this State. The four most formida-
ble of the preventable diseases, cholera,
small-pox, typhoid fever and yellow fever
have all been at our doors; two of them
prevalent to an unusual extent within our
borders. The threatening presence of the
first named of these dreaded infections in a
neighboring port, brought to your notice in
the last annual report, led you to instruct the
Secretary to take certain measures of precau-
tion. In obedience to those instructions the
following letter was immediately addressed
to his Excellency, the Governor :COMMONWEALTH OF PENNSYLVANIA, }
STATE BOARD OF HEALTH, }
EXECUTIVE OFFICE, 1532 PINE ST., }
PHILADELPHIA, November 12, 1887.To his Excellency JAMES A. BEAVER,
*Governor of Pennsylvania.*SIR : I am instructed by the State Board
of Health to transmit to your Excellency the
following resolution passed at its last regular
meeting held at Harrisburg, November 9th,
1887.BENJ. LEE, *Secretary.*

(Copy.)

Resolved, That in view of the continued
prevalence of Asiatic Cholera in Italy and
its recent importation into the harbor of New
York, and of the acknowledged inadequacy
of the present quarantine arrangements on
the Delaware to meet a similar emergency,*Read at the stated meeting in Harrisburg, No-
vember 14, 1888.

this Board respectfully requests your Excellency, the Governor of the State, to invite the Chief Executive officers of the neighboring States of New Jersey and Delaware to a conference, with a view to making joint application to the President of the United States for the grant of such portion of the reserve fund placed in his hands by Congress for meeting emergencies like the present as may be necessary to immediately establish a National Quarantine Station, either on Pea Patch Island (the site of Fort Delaware) or at the present quarantine hospital of the Marine Hospital Service at Cape Henlopen. Such station to provide ample and comfortable accommodations for quarantine of detention, inspection and observation, and for the care of the sick, to be furnished with all the modern appliances for the disinfection of ships, cargoes, baggage and clothing, and to have an abundant supply of pure water.

In response, Governor Beaver signified his readiness to take such co-ordinate action should the emergency become more pressing. At the same time the following communication was addressed to Surgeon-General Hamilton :—

DR. JOHN B. HAMILTON,
*Supervising Surgeon-General,
U. S. Marine Hospital Service,
Washington, D. C*

SIR :—I am instructed by the State Board of Health and Vital Statistics of the Commonwealth of Pennsylvania to transmit to you the enclosed copy of a resolution adopted at the regular meeting held November 9, 1888.

Yours, very respectfully,
BENJ. LEE, *Secretary*.

(Copy).

Resolved, That, in the judgment of this Board, the present situation in regard to the continuance of cholera along the shores of the Mediterranean and its transportation to the port of New York is of sufficient gravity to warrant the Surgeon-General of the Marine Hospital Service in notifying United States Consuls at ports either themselves infected or near centres of infection, that emigrants sailing from such ports will not be allowed to land in this country, until competent authorities have declared that all danger of infection has ceased in those ports or places.

The resolution was acknowledged with thanks and published in the "Weekly Abstract of Sanitary Reports," issued by the United States Treasury Department.

Communication was also held with the State Boards of Health of Delaware and New Jersey upon the same subject, so that everything was in readiness for obtaining immediate and efficient aid from the National Government had not the danger subsided.

In order to guard against the introduction of the disease through the medium of infected immigrants or their effects, on their release from the New York quarantine, the following measures were adopted :

The subjoined letter was sent to the President of every railroad company entering the State of Pennsylvania, the Philadelphia and Reading, the Philadelphia, Wilmington and Baltimore, The Pittsburg and Western, The Delaware, Lackawanna and Western, the Baltimore and Ohio and the Erie.

To the President of the Railroad Company :

DEAR SIR :—I am instructed by the State Board of Health of this Commonwealth to transmit to you the accompanying resolutions passed at its regular meeting at Harrisburg, November 9, 1877.

The readiness which your company has always shown to co-operate in measures designed to protect the public health, leaves no room for doubt, that this request will meet with prompt and efficient compliance on your part.

I have the honor to be, Sir, very respectfully,

BENJ. LEE, *Secretary*.

Resolved, That this Board respectfully requests the Presidents of the Railroad and Transportation Companies in this State to instruct their employes not to receive nor transport any immigrant from an Italian port who has been under observation at the quarantine station of the port of New York without a certificate from the authorities of said station, declaring that his or her person, clothing and effects are free from danger of communicating Asiatic cholera.

Courteous responses were received to this request in every instance, assuring the Secretary of the desire of the companies to co-operate to the full extent of their ability in preventing the introduction of the contagion. The intelligent appreciation always shown by railroad officials of the necessity for sanitary precautions, their ready comprehension of sanitary problems, and the attentive consideration with which they receive suggestions from sanitary authorities upon such matters, are as commendable as they are remarkable, and are in striking contrast to the supercilious neglect or undisguised resentment with which similar overtures are too often met by the petty magnates of country villages. The President of the Pennsylvania Railroad Company having asked for additional suggestions in regard to precautions to be taken during an epidemic, the Secretary replied as follows :—

PHILADELPHIA, November 23, 1887.

G. B. ROBERTS, ESQ.,
President Pennsylvania R. R. Co.

DEAR SIR: In reply to your favor of the 21st, in which you asked for suggestions from this Board in regard to possible precautions to be adopted in the event of the arrival of cholera infected immigrants I would say First, that it would be well for the company to consider the expediency of selecting some point on each line, which is likely to bring such persons into the State not far from the State line, and as remote as possible from any centre of population, provided with a good water supply, for the location of a temporary hospital, where passengers found sick or taken sick, with suspicious symptoms upon the train could be sent for isolation and treatment. Secondly. An obvious means of spreading the disease would be the discharges of patients dropped from the water closets on the tracks, and thence washed by the rain into rivers and other sources of drinking water. Arrangements should therefore be made by which all emigrant cars could at short notice be provided with earth closets in place of the open closets. Indeed I should look with great favor on the substituting of this form of closet on all trains and at all times. These are the only suggestions that occur to me in advance of the actual presence of an epidemic.

Yours, very respectfully,
BENJ. LEE, Secretary.

Simultaneously with the note to the officers of railroad companies the annexed communication was sent to the Quarantine Commissioners of New York:

PHILADELPHIA, November 16, 1887.

To the Honorable, the Quarantine Commissioners of the State of New York.

GENTLEMEN:—I am instructed by the State Board of Health of Pennsylvania to transmit to your honorable Board the accompanying resolutions adopted at its regular meeting held at Harrisburg, November 9th, 1887.

I have the honor to be yours, very respectfully,

BENJ. LEE, Secretary.

Resolved, That this Board respectfully requests the Quarantine Commissioners of the Port of New York

First, To allow no immigrant now under observation at their quarantine station or who may hereafter arrive from a port in which or near which Asiatic Cholera prevails, to leave without a certificate stating that his or her person, clothing and effects are free from danger of communicating the said disease, with the reasons for such belief.

Second, To notify the Secretary of this Board whenever immigrants leave the station with the intention of entering this State, in

order that they may be kept under observation by the local authorities; and

Third, To notify the Secretary of this Board whenever a new case of the said disease arrives or develops at the station.

The response to this communication came indirectly through the State Board of Health of New York, in the shape of a notification of the fact that one hundred and two immigrants from the steamship Alesia who were destined for points in Pennsylvania had been discharged with certificates of freedom from contagion. The name of each immigrant was given and the name of the place to which he was ticketed. The importance of such careful and specific information cannot be over estimated, and the incident affords a signal evidence of the value of co-operation between State Boards of Health. On the same day that this intelligence was received the following circular letter in Cyclostyle was sent to the authorities of the below named towns, giving the names of the immigrants who might be expected to arrive in each.

COMMONWEALTH OF PENNSYLVANIA, }
STATE BOARD OF HEALTH, }
EXECUTIVE OFFICE, 1532 PINE ST., }
PHILADELPHIA, Nov. 21, 1887.

To the Health Officer or Burgess of—

DEAR SIR:—It is my duty to inform you that the following named persons who have been quarantined by the health authorities of the Port of New York on account of cholera for several weeks past have been discharged from quarantine, their destination being your—

The interests of the public health demand that they should be kept under observation for a considerable period.

I have the honor to be, yours, very respectfully.

BENJ. LEE, Secretary.

List of Cities and Towns to which the above list of Immigrants was sent.

Balltown, Forest County.
Bangor, Northampton County.
Bloomsburgh, Columbia County.
Excelsior, Northumberland County.
Hazleton, Luzerne County.
Mt. Tabor or Pierce, Armstrong County.
New Castle, Lawrence County.
New Cumberland, Cumberland County.
Pittsburgh, Allegheny County.
Philadelphia, Philadelphia County.
Pottsville, Schuylkill County.
Wanamie, Luzerne County.
Walston, Jefferson County.

Fortunately the health officer of New York had done his work so thoroughly that no single case of cholera developed from any one of the many hundred immigrants who

spread themselves broadcast through the land.

The second of the contagious diseases named, variola, has made its appearance in five different localities: Chester; Lowhill, Lehigh County; Philadelphia; Bentleysville, Washington County, and in a lumber camp near Horton City. It was introduced into Chester by a colored woman who had been visiting friends in Wilmington. In that city its origin was clearly traced by the health officer to the "Augustine" paper mill. The Secretary made an attempt to discover from the owners of the mill what the source of the rags which produced the infection was, but as usual, in such establishments a know-nothing policy was strictly observed. The Chester authorities took prompt and efficient measures to stamp out the infection and confined it to four cases. Their experience, however, naturally made them feel anxious when it was rumored that there was a possibility of the removal of the small-pox hospital of Philadelphia to the Lazaretto, which is but a comparatively short distance outside of their city limits. A series of resolutions remonstrating against a continuance of quarantine at that point was passed by their Board of Trade and forwarded to the Secretary. Together with his reply they will be found spread upon the minutes of the Ninth Regular Meeting.

The origin of the disease at Lowhill was kindly traced by Dr. P. L. Reichart, the Health Officer of Allentown, who in the absence of an inspector for that district was requested to assume control there temporarily. It is somewhat curious. The keeper of a cheap hotel in Catasauqua finding old clothing constantly left on his premises, instead of adopting the plan of the Pennsylvania Railroad Company and promptly burning it, in a spirit of false economy sent it to his son-in-law at Lowhill to be used by his grand children. The garments proved veritable tunics of Nessus, infecting not only the children and immediate family, but a good woman from Slatington who helped to sort them, and who took back the disease with her to her home. The hotel was promptly closed and fumigated, the neighborhood vaccinated and the pestilence stayed.

The Board of Health of Philadelphia was not so fortunate in its management of the disease in that immense centre of popula-

tion. From the report of the Sanitary Committee to the Board, the following facts are gleaned with regard to its origin. An Englishman arriving on the steamship Lord Clive, February 2, coming from a house in England in which there was small pox, developed the disease after his arrival in so light a form as not to require the attendance of a physician. Two weeks after his departure, the nature of his illness not having been suspected by the other inmates of the boarding house, three of whom were taken sick. Unfortunately the disease was not recognized by the attending physician for several days, and then there was unnecessary delay in reporting it to the Board. Opportunity was thus given for the exposure of a considerable number of persons and it was taken abundant advantage of. After a stubborn fight in which vaccination and disinfection were freely employed, but isolation was not insisted upon as rigorously as could have been desired, at the end of eight months, the Sanitary authorities have, it is hoped, destroyed the contagion, with a record of three hundred and seventy-six cases and a sacrifice of eighty lives, to which must be added another, that of a man who contracted the disease in Philadelphia and carried it to Bentleysville, Washington County, where the case was at once taken charge of by Inspector Hunter of the State Board, and where the patient died without communicating the disease. During this period small pox has prevailed throughout the entire country. By means of the admirable system of inter-state notification now adopted by the State Boards through the medium of their annual conference, the Secretary has been kept constantly informed of its occurrence and progress in seventeen states and provinces. This widespread existence of the infection is plainly due to European importation, and the lines of steamships bringing immigrants to this country owe it to us to adopt more stringent regulations to prevent this transportation of the means of death. It is infinitely more terrible than the transportation of dynamite and infernal machines, which they are charged with conveying in the opposite direction. During the prevalence of a contagious disease such as had existed for a year previous to our own outbreak, in England, not only should the strictest precautions have been taken in

regard to vaccination, but no passenger should have been admitted into the steerage who could not show a certificate from a local health officer that he had not been exposed to the contagion for at least a month previous to presenting himself for embarkation.

It should also be made a misdemeanor, punishable both by fine and imprisonment, for any individual to suffer from an acute eruptive disease without obtaining the opinion of a respectable physician as to its nature, or for any landlord to harbor such individual, or for any parent to attempt to treat such an eruptive disease in a child, without obtaining such opinion. Had the landlord in this instance insisted on a physician being called when the eruption appeared on his guest, the entire epidemic would have been prevented and eighty-one persons now in their graves, might still be in the enjoyment of life and health. In addition to this let it not be forgotten that the average value of a human life, taking the average of all ages, has been estimated by careful political economists to be not less than \$1,500, and we have a loss to the wealth of the city of \$120,000 in lives alone. Instances have fallen under the notice of the Secretary and probably of every medical member of this Board in which mothers have attempted to treat what they ignorantly supposed to be measles, without "sending for the doctor," and have been the unintentional though not innocent means, of sending scarlet fever forth on its errand of death to many a home.

Much difficulty was experienced in a number of cases during this outbreak in inducing the friends or family of patients to allow them to be removed to the Municipal Hospital, when in the judgment of the officers of the Board of Health of the City, public safety demanded it. In order to settle the question of the right of the Board to enforce its orders in this matter, the Secretary addressed a note to Attorney General Kirkpatrick requesting an official opinion. Such opinion was promptly given and sustained the power of the Board to the fullest possible extent. Such decisions having now been given both in the Eastern and the Western metropolis of the Commonwealth, there can be no reasonable doubt that a local Board of Health in any part of the State would be sustained in using force, if necessary, in the removal of an infected person to the hospital

for infectious diseases. The fact is simply, that in the presence of an epidemic, sanitary law, to be worth anything to the community, must be as absolute and untrammelled as martial law. As has been said, this outbreak is now apparently at an end, there being only a straggling case now and then, but the possibility of the survival of its germs in clothing or other effects which have escaped the action of the public disinfectant makes the utmost vigilance necessary if the advent of cold weather with its attendant deficient ventilation, is not to stimulate them to renewed activity and subject the city to another period of anxiety. At Horton City the disease was confined to a single case, and so efficient were the precautions taken by the Drs. Earley of Ridgway that the Inspector of the Board, Dr. Free, found nothing to do on his arrival but to sustain the action they had taken. The only case occurring at Pittsburgh was promptly sent to the hospital for infectious diseases by Superintendent of Public Health, McKelvy, and failed to communicate the disease.

The Secretary desires here to acknowledge the vigilance and kindness of Superintendent McKelvy and Health Officer Patterson of Philadelphia in notifying him of the existence of suspicious cases outside the limits of their respective cities.

It will be seen then that the event has fully justified the precautionary measures taken by the Secretary early in the year in warning all local Boards of Health of the necessity for taking unusual precautions against the introduction of small pox, and in vaccinating the children in an otherwise unprotected extra-mural suburb of Philadelphia. And the following is the advisory letter on that subject :

COMMONWEALTH OF PENNSYLVANIA.
STATE BOARD OF HEALTH.
EXECUTIVE OFFICE, 1532 PINE ST.

PHILADELPHIA, March 15, 1888.

To all local Boards of Health and Borough Councils, in Pennsylvania, on Appendix M.

This Board has received official information since the first of the year of the existence of small-pox in nine states of the Union. Two outbreaks have occurred in this State. The State Board of Health of California has declared it epidemic in that State.

It is raging with great virulence in the neighboring island of Cuba, where sanitary

precautions appear to be extremely lax, and with which we are in constant communication.

It has prevailed extensively during all the past winter in portions of Great Britain.

In the neighboring state of Delaware cases exist and several deaths have occurred as the result of the importation of infected rags. This Board therefore deems it its duty to urge upon all municipal and sanitary authorities the importance,

First. Of doing all in their power to promote vaccination in their respective communities; and

Secondly. Of keeping all new comers and returned travelers, and especially all immigrants, under observation for fourteen days after their arrival, in order that, should symptoms of this disease manifest themselves, steps may be taken to circumscribe and isolate the centre of infection with the least possible delay.

By order of the Board,

BENJ. LEE, *Secretary*.

The third disease mentioned, Typhoid fever, has prevailed to an unusual extent in the cities of Pittsburg and Philadelphia. Both of these cities having efficient and experienced health bureaus, there was no occasion for interference on the part of this Board. But as both outbreaks were clearly due to a considerable extent to the character of the drinking water used, the responsibility of the Board for urging such state legislation as shall insure the purity of the water supplies of cities and towns is thereby emphasized. Your Committee on Water Supply has had assigned to it the duty of preparing a bill for presentation to the next Legislature which shall in some measure remedy the present irresponsible modes of procedure of water companies. Complaints of citizens of Chestnut Hill led to an investigation of the prevalence of this affection in the State Hospital for the insane at Norristown, the result of which exonerated the officers of that institution from the suspicion of any disregard of sanitary precautions, and made it evident that typhoid germs could not have reached the Schuylkill from there.

Yellow fever has been three times brought to the Capes of the Delaware during the past summer, but through the vigilance of Surgeon Orr, of U. S. Marine Hospital service, has not passed the U. S. Quarantine station at the Breakwater.

Our sympathy with sufferers of a stricken sister state has therefore happily been for us that born of the fellowship of brotherhood and humanity alone, and not of misery.

But, in passing, the conviction must be expressed—and it is that of all those who have given the subject thoughtful attention—that if Florida had possessed a State Board of Health, this terrible ordeal might have been, to a great degree, if not entirely escaped.

The last report closed with an allusion to the “absence of any law in this State for circumscribing and stamping out the epizootic disease known as glanders or farcy.” That the allusion was called for is evidenced by the fact of occurrence during the past spring and summer of a considerable outbreak of this incurable, infectious and, in man, agonizing disease, in Monroe County. The attention of the Secretary was called to it by the following letter:

STROUDSBURG, MONROE, CO., PA.

June 7th, 1888.

DR. BENJ. LEE, *Secretary Board of Health*.
313 S. 15th St., Phila., Pa.

DEAR SIR:—I enclose reports of the State V. S. F. Bridge and Prof. Huidekoper of the University of Pennsylvania, from which you will see that glanders is prevalent in the county. Some of the owners whose horses were examined refuse to kill them, and the same difficulty would be met throughout the country. There are undoubtedly a large number of cases in the county at present, and if vigorous methods are not used the disease will be widespread.

I am informed that your Board can kill all infected horses on the ground that the disease is one which is dangerous to human life; if such is the case I will endeavor to have the State Veterinary pay another visit here and examine all suspected cases in the county, and if a state officer could come with him and kill all condemned horses at once, the disease could probably be stamped out.

Awaiting the favor of your reply, I remain
Yours truly,

ROBT. J. VASSEUR.

The report of Prof. Rush T. Huidekoper, consulting State Veterinarian, expressed the conviction as the result of his inspection that “An extensive and dangerous epizootic of glanders-farcy” prevailed among the animals of that region, and closed with the following recommendation: “There is at present no specific law in Pennsylvania in reference to glanders. I understand that the only means by which it can be reached is through the Board of Health, who have such animals destroyed as a matter of protection to man. I would advise you to report the extensive existence of this disease in your county to the Board of Health and request their official investigation.” Under the cir-

cumstances, there seemed but one course open, to order an inspection by Dr. McIntyre Medical Inspector for the district, and to authorize him to kill any and every animal for which the State Veterinarian would give a written certificate that it was infected with the disease in question.

Communication was at the same time had with Mr. Secretary Edge, of the State Board of Agriculture, his Excellency, Governor Beaver and the Honorable, the Attorney General of the State, in regard to provision by the State for compensating owners of such diseased animals for their loss when killed by order of a State officer. At the last meeting of this Board, Secretary Edge was invited to be present and favor the Board with his views upon the subject, which he kindly did. As a result, a resolution was passed declaring "that this Board would take action in reference to the suppression of diseases of domestic animals communicable to man, only in conjunction with the Board of Agriculture, and would always be ready to co-operate with said Board in its efforts for this purpose; and also in the endeavor to secure appropriate legislation touching the subject."

It is earnestly to be hoped that the next Legislature will not adjourn without supplying this manifest deficiency on the Statute Book, and conferring the appropriate power upon the Board of Agriculture.

Agreeably to an arrangement with Secretary Edge, Dr. Engleman, the President of this Board, Medical Inspector McIntyre, and the Secretary, met the Secretary of the Board of Agriculture and State Veterinarian Bridge at Stroudsburg, Monroe County. The owners of the condemned animals and other citizens interested were called in and a conference was held, with the result of establishing a basis for compensation of owners for said animals if killed. The owners all expressed themselves satisfied to take certificates from the Secretary of the Board of Agriculture, and the matter was thus satisfactorily adjusted. On the day following, the Secretary accompanied the State Veterinarian to Shawnee and other points, and was present at the killing of three infected horses and one mule. Post-mortem examinations were made by Dr. Bridge, verifying the diagnosis in the case of the horses. The animals were all buried where they fell, at a distance from

the habitations of either men or beasts.

The manifest insufficiency of the appointment of most of the Quarantine Stations along the coast, taken in connection with the presence of smallpox and the threatening of cholera, produced a feeling of insecurity among sanitarians at the west, which found expression at the Conference of the State Boards of Health in Cincinnati in May last, at which the President and Secretary of this Board attended as delegates. The discussion of the subject was opened by your Secretary in a paper entitled "Should the National Government assume control of Quarantine at all Ports of Entry?" Before the "Section on State Medicine" of the American Medical Association, he introduced the same question in a paper under the caption, "Should not the National Government defend our Ports against the National Enemy, Contagious Disease?" The discussion thus elicited resulted in the passage of resolutions by both bodies, urging upon Congress the importance of making appropriations for furnishing properly equipped quarantines at all unprotected points, and in the appointment by the Conference of State Boards, of a Committee to inspect the quarantine establishments of the Atlantic and Pacific coasts.

To a Sub-Committee, consisting of the President of the State Board of Health of Ohio, Dr. John D. Jones and your Secretary, was assigned the middle Atlantic District, extending from New York to Wilmington, North Carolina, and including the stations at New York, Philadelphia, the Delaware Breakwater, Baltimore, Norfolk, Cape Charles and Wilmington, N. C. The Committee started on its tour of observation June 12, and occupied ten days in its completion. The following is its report on the Quarantine establishment of this State, that is, the establishment for which the State makes the laws, and the City of Philadelphia furnishes the money.

PHILADELPHIA.—The Lazaretto, or Quarantine Station of Philadelphia, was inspected Thursday, June 14th, in company with Dr. W. H. Ford, President of the Board of Health of Philadelphia, and the Health Officer of the City, Mr. Joseph G. Patterson. The buildings, through which we were conducted by Mr. Robert Carns the Steward, remain as at the time of the previous inspection. The fine old hospitals have ample accommo-

dations for sixty patients, and there is bedding on hand for forty. But no steps have yet been taken to utilize the United States warehouse as an observation depot. The only water supply is from hand-pumps in wells. There are no water-closets or sewers, simply old privy vaults. There is no adequate provision for unloading an infected cargo. The disinfecting chamber is a small wooden building about ten feet by twelve, in which sulphur fumigation is practiced. There is no apparatus for disinfection by steam. Immediately in front of the station is a wide marsh, into which the establishment drains, and although it is affirmed that malaria does not exist here, it is manifest that the filling in of this spot, with the erection of a secure bulk-head, preferably of stone, and covering the whole with an impervious coating of asphalt, together with the introduction of a proper system of sewerage, would greatly increase both the salubrity and the commodiousness of the institution. By the courtesy of Dr. Brusstar, the Lazaretto physician, and Mr. Newhard, Quarantine master, we accompanied these gentlemen on the hospital tug "Visitor," a swift and staunch boat, on an official visit to two vessels, the brig George E. Dale, from Port de Paix, Hayti, and the ship Lansdowne, from London. The plan adopted here of having two officials, one medical, to examine the passengers and crew, the other non-medical, to examine the vessels, bilge and cargo, appears to your committee judicious, and calculated to diminish the delay to commerce to a minimum.

All the executive officers connected with the Quarantine Service of this port, are appointed by the Governor of the State, and their salaries are fixed by Legislative Acts, although the City is called upon to pay them. They are: a Health Officer, a Lazaretto Physician, a Port Physician and a Quarantine Master. The Steward derives his appointment from the City Board of Health. There appears to be an occasional conflict of authority resulting from this arrangement. Telegraphic communication with the City was opened apparently on the day of our visit, but even more essential than this, is direct communication by wire with the Maritime Exchange at Thurlow, eight miles further down, where early intelligence of the approach of vessels from the bay is

received. We accompanied the Lazaretto Physician to this office, and he was handed a list of some six vessels on the way up. It is, of course important that he should receive this information as early as possible.

Dr. Brusstar assured us that he would detain a vessel as quickly on account of a case of diphtheria or scarlet fever as of small-pox. This service is maintained only during the warmer half of the year. The facilities for heating the hospital are therefore very meagre. During the winter, vessels proceed directly to the city where they are examined by the port physician, who thus becomes the quarantine medical officer. Small-pox patients are taken from the steamers at the wharf by the ambulance of the Municipal Hospital, and conveyed through the city to that institution. This plan does not commend itself to the approbation of your committee. The present prevalence of that disease in Philadelphia must be attributed to it. The interests of a city of nearly a million inhabitants to say nothing of the many millions of the interior, who look to its authorities for protection, demand that equal vigilance should be maintained during every month of the year.

The location of this station cannot but be regarded as unfortunate. And yet is the only available one for the city of Philadelphia or the State of Pennsylvania. The southern boundary of the State is but twelve miles below, and the river bank for the entire distance is lined with industrial establishments which support an immense population. The property adjoining above is a valuable one for such enterprises and we are told that negotiations were already pending for its purchase. The Delaware, moreover, is the maritime vestibule of two other States beside Pennsylvania; and expediency as well as justice demands that some system of protection should exist for their bay and river coasts for the seventy miles below the Pennsylvania State line.

The following is a general summary of the results arrived at by the committee. "The result of our inspection of these seven stations covering the most important ports of entry of the entire country is as follows:

The requirements of modern maritime quarantine are:

First. Absolute protection of the whole nation against the introduction of contagion.

Second. Ample provision for and humane treatment of suspects under detention, with facilities for grouping.

Third. Proper hospital accommodations for the sick with adequate service, medical and general.

Fourth. The least possible interference with commerce, to be attained only by the possession of fully equipped disinfecting establishments, provided with modern appliances.

Fifth. The shortest possible detention of passengers, dependent upon similar provision and equipment.

Sixth. Uniformity of regulations in all ports, with central administration, and means of obtaining the earliest possible information of the approach of infection to our coast, or its existence in any port or city in the country.

Now, as has been seen, in one instance only did we find a station equipped in any way approaching the requirements just named, and in this instance so entirely out of repair was the whole establishment that the charity of foreigners had recently been invoked in order to enable it to meet an emergency. In every case, but one, the sanitary authorities complained that they were hampered for lack of funds and that they were not in the exceptional case, was due to the fact that they made comparatively little provision for the future, preferring to meet the demands of the moment as best they could and to rely upon the municipal government to assume the expense after it had been incurred.

The evils resulting from the present disjointed system may be thus summed up :

First. Want of uniformity in quarantine regulations, placing one port at a disadvantage as compared with another.

Second. Conflict of authority owing to the methods of appointing officials.

Third. The entire lack of appreciation on the part of local legislatures, whether State or Municipal, of the importance of expenditure of considerable amounts of money in order to render quarantine at once efficient and inoppressive.

Fourth. The tendency on the part of local civic sanitary authorities to limit their responsibility to the protection of their own city, reckless of the consequences which may ensue to inland communities, if they permit infection, which circumstances render harm-

less to themselves, to pass unchallenged to the latter."

"Understanding that the appointment of the committee was intended to lead to practical results, and conveyed power to take such action as in their judgment appeared necessary for the better protection of the coast, and being deeply impressed with the soundness of the conclusions above rehearsed, your committee proceeded at once to Washington and obtained hearings from the sub-committee on Quarantine of the Committee on Commerce of the House of Representatives, and from the Honorable Speaker of the House, urging upon them the importance of the speedy passage of Senate Bill No. 2493 to establish seven fully equipped quarantine stations at points on the Atlantic and Pacific coasts, viz. : one at the mouth of the Delaware Bay ; one near Cape Charles, at the mouth of the Chesapeake Bay ; one in the Georgia coast ; one at or near Key West ; one in San Diego harbor, one in San Francisco harbor, and one at or near Port Townsend, at the entrance of Puget Sound.

We were listened to with courtesy and attention in each instance, and assured that every opportunity would be furnished for bringing the bill before the House at the earliest possible moment.

These assurances were strictly fulfilled. The bill passed the House soon after and is now a law.

The Board may reasonably hope, therefore, that another summer will find preparations under way at least, for establishing a thoroughly equipped station at the entrance to Delaware Bay, an object which it set before itself at its very first meeting.

The importance of preserving the purity of the food supplies of the country is to Pennsylvania with her immense laboring population, unquestioned. It was with this view that the Board delegated its president and secretary to attend the National Pure Food Convention at Washington in January.

Notwithstanding the efforts of retail tradesmen to capture the convention, a bill was finally adopted, which if passed by Congress will effectually prevent the importation of adulterated foods and drugs into the country and their manufacture or sale in any territory or reservation belonging to the National Government. Such a law could not fail to be imitated by all the State Legislatures and

a new era of pure food would then be inaugurated.

Of even paramount importance is the question of a pure water supply, from the fact that the character of the impurities in water is apt to be of so morbid and deadly a nature. The Board may well congratulate itself on the opportunity which it enjoyed in the early part of the year for interfering to prevent a most dangerous pollution of the water supply of the important city of Wilkes-Barre. The danger arose from the construction of a new line of railway from Pittston to Fairview, running directly along the small streams which supply some of the reservoirs of the city. The laborers deposited their excreta and garbage with entire impunity upon the banks of these streams. The result upon the arrival of warm weather might easily have been a second and enlarged edition of the Plymouth tragedy. Fortunately the Secretary of the Luzerne County Medical Society, Dr. G. W. Guthrie, invoked the interference of the Board in good time. The foul deposits were removed during freezing weather, the earth disinfected, and a new sanitary regime inaugurated. To this end the cheerful and intelligent aid of the Lehigh Valley Railroad Company's officers greatly contributed.

The water supply of Philadelphia, with its more than a million of inhabitants, cannot but be a subject of great anxiety. It is hoped that the utilization of the immense reservoir in the East Park as a settling basin, and the completion of the intercepting sewer, will temporarily, at least, improve its quality, so far as the Schuylkill is concerned. The Delaware, at Philadelphia, is simply a huge open sewer, and its use for drinking purposes must always be attended with an undue prevalence of typhoidal and diarrhoeal diseases.

The Pittsburgh Board of Health have taken a great step forward in the solution of that perplexing question, the disposal of garbage. Small towns and government stations have already undertaken the destruction of this noxious material by fire, but now for the first time a city of nearly a quarter of a million inhabitants is cremating its garbage. The experiment has continued now for a year, and appears to be entirely successful. A complete report on this interesting subject is much to be desired.

The water supply of Pittsburgh has been made the subject of an exhaustive investigation by the Board of Health of that enterprising city, who have published a report of so much scientific value that I urge its publication in connection with this report.

All our efforts to provide pure water, however, will be rendered useless if impure ice is added to it to cool it. Impressed with this truth, the Board of Health of West Chester appealed to this Board to investigate the source of much of the ice supply of that borough. Our inspector found the ponds from which it was procured to contain the drainage of the filthiest part of the town, and of a colored burying-ground, while analyses of the pond-water and of the melted ice disclosed pollution of the gravest nature. The Secretary recommended that before another summer the pond should be protected by a deep ditch from the objectionable inflow, and that wagons dispensing the polluted ice should be compelled to display placards stating the source of the ice and the fact that the State Board of Health advised that it should not be allowed to come in contact with food or drink.

An admirable report on this question of ice pollution has been issued by the Sanitary Protective Association of Newport, R. I. Portions of this might profitably be inserted in the Appendix to our Annual Report for the information of the public on this too little recognized source of disease.

But even though we ensure purity in our food, supply our towns with pure water, and cool the latter with unpolluted ice, we shall fail in all our efforts to protect health if we breathe a contaminated air. It is, therefore, a source of unfeigned satisfaction to your Secretary to be able to report that the defects of drainage in the Executive Mansion, which he felt compelled to animadvert upon in his previous report and which constituted a constant menace to the lives and health of our Chief Magistrate and his family have since been entirely remedied, and the building itself so completely renovated and remodeled as to make it a safe and not unbecoming residence for the Executive Officer of a great Commonwealth.

There is still room, however, for an immense improvement in the sewerage of the city. A trunk sewer should be constructed to convey all sewage to a point below the

city limits, and the charming river front should be converted from an ash and a garbage dump into the beautiful pleasure ground for which nature and the founder of the city intended it. The difficult problem of the disposal of sewage has been taken up in a masterly way by the councils of Altoona. A report made to them by Dr. Charles B. Dudley, one of the Medical Inspectors of our board, is an extremely valuable contribution to the study of this perplexing question as it is met with in towns remote from large water courses, and should have a wide circulation.

The appearance of cases of genuine leprosy in the city of Philadelphia, and the criticism to which the Board of Health of that city was subjected by well-meaning sentimentalists, for their prompt action in isolating and extraditing it, led the State Board to adopt the following resolutions :

Resolved, That this Board endorses the recent action of the Board of Health of the city of Philadelphia in promptly isolating two individuals affected with leprosy.

Resolved, That it is irrational to suppose that transportation to America will deprive this disease of its infectious character ; and therefore

Resolved, That it be placed upon the list of "Communicable Diseases, Dangerous to the Public Health" in the "Model Ordinance for the better preservation of the Public Health in Cities and Boroughs of Pennsylvania ;" and further, that all Boards of Health, Sanitary Committees and Borough Councils throughout this State be enjoined to class it among the diseases required by law to be reported to the Sanitary authorities.

This was sent to all Boards of Health and other Sanitary authorities in the State.

The following resolution upon the same subject was transmitted to Surgeon-General Hamilton and to the officers in charge of all Quarantine stations and Secretaries of State Boards of Health.

Resolved, That it is the sense of this Board that strict quarantine should be established against leprosy, and that all lepers attempting to enter this country should be returned to the port whence they came.

Secondly, That those already here or that may develop here should be rigidly isolated.

Thirdly, That it is eminently desirable that entirely distinct hospitals should be provided for such cases ; and

Fourthly, That the bodies of diseased

lepers should be cremated, after disinfection, or buried in lime.

Since the passage of this resolution information has been received of the escape of one of these unfortunates from the Leper House at Tracadie, New Brunswick, into the United States. New cases of this loathsome disease have frequently appeared of late, and it is quite time that the fact of its tendency to spread at present should be generally recognized by health authorities.

The Secretary also called the attention of the Conference of State Boards of Health to this disease in a paper entitled, "What should be the attitude of State Boards of Health towards leprosy?" and a committee was appointed to report upon the matter at the next meeting.

Official information having been recently received from the Secretary of the New York State Board, of the existence of small-pox among the Indians of the Cataraugus and Allegheny Reservations in that State, the Secretary at once telegraphed instructions to Dr. J. L. Stewart, of Erie, Medical Inspector to the Board for the Lake District, to visit the Cornplanter Tribe in Warren county, the members of which are in constant communication with those of the New York Reservations, and take the necessary means for their protection. The instructions were carried out with commendable promptness. The entire tribe was vaccinated, and the Chief, Marsh Pierce, promised to forbid his people crossing the border, until the disease had disappeared. He rendered every assistance to the Vaccine Physician and extended the thanks of himself and his people to the State Board for its timely action in their behalf.

While thus occupied with meeting in detail the practical emergencies of sanitation in all parts of the State, the Board has not forgotten that one of the important duties assigned to it is the dissemination of information on sanitary subjects among the people. To this end it has issued during the last year new editions of many of its circulars on the prevention of contagious diseases, and has added to them a "Manual of School Hygiene" and a "Manual of Camp Hygiene." Both of those appear to have been highly appreciated. Criticism upon them will be welcomed in order that future editions may be more complete and perfect. In connection with

the latter it is with sincere pleasure that the secretary notes the improvement which has taken place in the hygiene of the encampments of the National Guard since the board first began its inspection of them. There is still, however, room for improvement and the desire of the Board has been to place in the hands of the medical officers of the Guard, and, as well, of those who are in charge of civic encampments, whether religious or festive in their character, in a condensed form, essential information in reference to their duties which they would otherwise be compelled to seek from many sources.

Probably the most active agency set on foot by the Board for the dissemination of knowledge in relation to the public health during the past year was, however, the Sanitary Convention at Lewisburg. As the first effort in this State to hold such a convention in a small country town, and supply all the material from the State and the most of it from the town itself, its success was as gratifying as it was remarkable. Notwithstanding the extreme inclemency of the weather during much of the time its sessions were largely attended by a deeply interested audience. In the unavoidable absence of the Governor of the State, the Honorable Secretary of State, Mr. Stone, represented the Executive Department of the Government, and made a felicitous address in opening the convention. The sanitary conditions of Lewisburg were discussed from every possible point of view by both strangers and citizens, and an impulse was given to the cause of hygiene in all that region, which will be felt for good for years to come. The address of the President, the Honorable S. T. Davis, of Lancaster, on "The Importance of a thorough Sanitary Organization of the State, under Legislative authority" was a paper of much force and carried conviction to all who listened to it. At its conclusion, a committee was appointed to consider certain recommendations contained in it. The following is the report of the committee, which consisted of Prof. J. B. Walker, M.D., of Philadelphia, Honorable M. P. Watson, of Shenandoah, and the Hon. Horace P. Glover, of Lewisburg.

The committee appointed to consider the suggestions contained in the valuable address of the President with reference to the importance of additional legislation on sanitary

matters, beg leave respectfully to report the following resolution for the consideration of the convention :

Resolved, That the Sanitary Convention now in session at Lewisburg, desires to express its conviction that in order that the State Board of Health may be able to discharge satisfactorily the important duties assigned to it in the protection of the public health and the registration of vital statistics, it is essential,

1st. That every township in the State should have some form of sanitary organization prescribed by law.

2d. That all county registration officers should be required to report to the State Board of Health.

3. That the appropriation for the work of the Board should be materially increased.

Resolved, That the officers of this convention be instructed to transmit these resolutions to his Excellency, the Governor of this Commonwealth, with the request that he call the attention of the Legislature to these subjects in his next message to that body.

So great was the interest felt in its deliberation, that it was the unanimous expression of those present that two such conventions should be held each year. The appropriation of the Board, however, will not warrant the necessary expenditure. It is proposed to hold the next in the city of Pittsburgh in the month of May, 1889, when the sanitary problems which present themselves in large inland cities will be more especially discussed.

Registration of births, marriages and deaths, and of prevalent diseases, has not been vigorously pushed by the Board, not because it ignores the urgent importance of the duty, but because it is absolutely without machinery to prosecute it. Registration of physicians is not so difficult of accomplishment, and the Register of the State will soon be completed.

It is to be hoped that the next Legislature will see the wisdom of the request of the Board that each branch appoint a "standing committee on public health." With such a committee who could devote especial study to the measures proposed by the Board, involving "legislative action or precaution deemed proper for the better protection of life and health," as the law calls upon it to

do, the chances for an intelligent hearing and comprehension of the same would be vastly increased.

In conclusion the Secretary bespeaks from the Board a continuance of that forbearance for his short-comings, and that ready co-operation in all its efforts for the public good which he has so gratefully recognized in the past.

A MEASURE TO SUPPRESS FRAUDULENT AND INJURIOUS FOOD AND MEDICINE ADULTERATION.

A BILL PREPARED FOR PRESENTATION TO
THE LEGISLATURE OF PENNSYLVANIA,
AT THE SESSION OF 1889, BY H. B.
AND H. WHARTON AMERLING,
ON BEHALF OF THE AMERICAN
SOCIETY FOR THE
PREVENTION OF
ADULTERATION
OF FOOD, &C.

An Act to establish, in connection with the State Board of Health, a Bureau on Adulteration and to provide for the maintenance thereof and to regulate or prohibit the manufacture and sale of adulterated articles of food and drugs.

SECTION I. *Be it enacted, &c.*, That there shall be established at Harrisburg, a bureau with a chemical laboratory to be known as the Bureau on Adulteration. The State Board of Health shall recommend one or more suitable persons, and the Governor shall appoint one of such persons by and with the advice and consent of the Senate as the chief officer of said bureau, who shall receive a salary of \$2,500 per annum, and said chief officer shall appoint such chemists, inspectors and clerks as are recommended by the State Board of Health to be necessary for the proper enforcement of this act. And the inspectors so recommended must have graduated from some reputable school or college of medicine, and said chief officer and said inspectors and chemists shall hold office during their good behavior, and the chief officer and the chemists shall, with the members of the State Board of Health, constitute the said Bureau on Adulteration, and it is provided that the total expenses of said bureau, including necessary traveling

expenses of inspectors and employes, but exclusive of offices, laboratory, stationery and supplies, which shall be provided by the State Treasury, shall not exceed \$15,000 per annum.

SECTION 2. That no person within this Commonwealth shall manufacture, sell, or offer for sale, or shall cause any one in his employ to manufacture, sell, or offer for sale, any article of food or drugs which is adulterated within the meaning of this act, provided that any person accused of selling or offering for sale any article adulterated within the meaning of this act, who shall prove that he procured such article under a written or printed warrant, which warrant may be printed on a label or marked upon the package, or printed upon the bill or invoice, that the same was pure and unadulterated according to the definition herein, and any person so accused, who shall prove that in the ordinary course of his business he was employed as clerk or salesman on behalf of other persons to make or sell such goods, and was without knowledge of their adulterated character, and that he gave to the prosecuting attorney all the information in his power with respect to the quality of the article and the person or persons by whom said articles had been manufactured or sold, shall be discharged from prosecution, provided, however, that such proof in defense shall be filed prior to the opening of the case in court. Any person violating any of the provisions of this section, or making or giving a false or fraudulent warranty, or swearing falsely in relation to any of the proof or things required herein, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall, for a first offense, be fined not more than \$100 or imprisoned not exceeding one year, or both, in the discretion of the court, and for each subsequent offense not more than \$500, or imprisoned not exceeding two years, or both, in the discretion of the court.

SECTION 3. No person shall sell to the prejudice of the purchaser any article of food or any drug which is not of the nature, substance and quality of the article demanded by such purchaser, under the penalties of this act, provided that an offense shall not be deemed to be committed under this act in the following cases; that is to say:

1. Where any matter or ingredient, not

injurious to health has been added to the food or drug because the same is required for production or preparation thereof as an article of commerce, in a state fit for carriage or consumption, and not fraudulently to increase the bulk, weight or measure of the food or drug, or conceal the inferior quality thereof.

2. Where the drug or food is a proprietary medicine, or is the subject of a patent in force, and is supplied in the state required by the specification of the patent.

3. Where the food or drug is unavoidably mixed with some extraneous matter in the process of collection or preparation.

No person shall, with the intent that the same may be sold in its altered state without notice, abstract from an article of food or drug any part of it so as to affect fraudulently or injuriously its quality, substance or nature, and no person shall sell any article so altered without making disclosure of the alteration.

No person shall sell any compound article of food or compounded drug which is not composed of ingredients in accordance with the demand of the purchaser, under the penalties of this act.

Provided that no person shall be guilty of any such offense as aforesaid in respect of the sale of an article of food or a drug mixed with any matter or ingredient not injurious to health, and not intended fraudulently to increase its bulk, weight or measure, or conceal its inferior quality, if at the time of delivering such article or drug he shall supply to the person receiving the same, a notice, by a label distinctly and legibly written or printed on or with the article or drug to the effect that the same is mixed.

SECTION 4. That it shall be the duty of said inspectors to make inspection of all breweries, distilleries, bakeries, factories, dairies, stores and markets, where food or medicines are prepared for sale or offered for sale, and secure samples daily, excepting legal holidays, of all articles of food and drugs likely to be adulterated or susceptible of being adulterated—which are being manufactured for sale or are offered for sale in any part of this Commonwealth, and shall submit said samples to the chemists of said bureau for examination and analysis, and at the time any article is obtained for examination and analysis, it shall be divided into

three parts, which shall be duly sealed, and one of which shall be delivered to the person from whom it was purchased, who shall be informed that an analysis is intended, and one part shall be retained by the bureau for reference. If it shall appear from such examination and analysis that any of the provisions of this act have been violated, said bureau shall then report the fact to the proper prosecuting attorney, with a copy of the analysis duly authenticated by the analyst under oath.

SECTION 5. That it shall be the duty of every prosecuting attorney, to whom the Bureau on Adulteration shall report any violation of this act, to cause proper proceedings to be commenced and prosecuted without delay for the fines and penalties in such cases provided, and all fines and penalties shall be for the benefit of the State; and all foods found injuriously adulterated shall be destroyed publicly wherever manufactured or offered for sale, and all foods found on sale adulterated within the meaning of this act which are not injuriously adulterated shall be seized and given to such charitable institutions as are recipients of State aid.

SECTION 6. That every person manufacturing for sale or exposing any article of food or drugs for sale, or delivering any articles to purchasers, shall be bound to admit any inspector under this act to such store, house or place where articles of food or drugs to be offered for sale are stored or kept, and to serve or supply any inspector appointed under this act, who shall apply to him for that purpose, and on his tendering the value of the same for a sample sufficient for the purpose of analysis of any article which is included in this act and which is in the possession of the person selling, under a penalty not exceeding fifty dollars, or imprisonment not exceeding six months, or both, in the discretion of the court, for a first offense, and one hundred dollars or imprisonment not exceeding one year, or both, in the discretion of the court, for a second or subsequent offense.

SECTION 7. It shall be the duty of the Bureau on Adulteration to prepare instructions governing the work of officers and chemists charged with the examination and analysis of food and drugs, which shall control their action, and that it shall be the duty

of the chief officer of the bureau to report monthly to the State Board of Health the number, kind and name of articles in which adulteration was detected, with the names of the manufacturers and dealers in the same, which shall be published in a monthly bulletin. But no such publication shall be made until after the determination of the question previously had in court, when such trial is possible.

SECTION 8. That an article shall be deemed to be adulterated within the meaning of this act.

(a). In the case of drugs :

1. If, when sold under or by a name recognized in the United States Pharmacopœia, or the United States Dispensatory, last edition, it differs from the standard of strength, quality or purity laid down therein.

2. If, when sold under or by a name not recognized in the United States Pharmacopœia, last edition, or the United States Dispensatory, but which is found in some other pharmacopœia or other standard work on materia medica, it differs materially from the standard of strength, quality or purity laid down in such work.

3. If its strength, quality or purity fall below the professed standard under which it is sold.

(b). In the case of food or drink :

1. If any substance has been mixed with it so as to reduce or lower or injuriously affect its quality or strength, or fraudulently increase the weight.

2. If any inferior substance has been substituted wholly or in part for the article.

3. If any valuable constituent of the article has been wholly or in part subtracted.

4. If it be sold under the name of another article.

5. If it consists wholly or in part of a diseased or decomposed, or putrid, or rotten animal or vegetable substance, whether manufactured or not, or, in the case of milk, if it is the product of a diseased animal or falls below the standard to be fixed by the Bureau on Adulteration.

6. If it be colored, or coated, or polished, or powdered in a manner injurious to health.

7. If it contains any added poisonous ingredient, or any ingredient which may render such article injurious to the health of a person consuming it ; provided that the Bureau on Adulteration may from time to time de-

clare certain articles or preparations to be exempt from the provision of this act ; and provided further, that the provisions of this act shall not apply to mixtures or compounds recognized as ordinary articles of food, when the same are not injurious to health, and that the articles are distinctly labeled as a blend or mixture.

(c). In the case of candies and chocolate :

If they contain terra alba, barytes, talc, chrome yellow, or other mineral substance, or poisonous colors or flavors, or other ingredients deleterious or detrimental to health.

(d). In case of tobacco :

If any injurious or deleterious drug, chemical, material or substance has been added or mixed with it to color, flavor, polish or for any purpose.

(e). In the case of baking powder :

If any terra alba, barytes, alum or any injurious or deleterious drug or injurious mineral substance has been used in its preparation or is added thereto or mixed therewith.

SECTION 9. That it shall be the duty of the Bureau on Adulteration to prepare and publish from time to time lists of the articles, blends, mixtures or compounds declared to be exempt from the provisions of this act in accordance with the preceding section.

The Bureau of Adulteration shall also from time to time fix the limits of variability permissible in any article or compound.

SECTION 10. The term "food," as used in this act, shall include every article used for drink or food by man. The term "drug," as used in this act, shall include all medicines for internal or external use.

SECTION 11. All of the regulations and declarations of the Bureau of Adulteration made under this act from time to time and promulgated shall be printed in the statutes at large.

SECTION 12. The act shall take effect three months after its passage. All previous acts upon the subject of food adulteration in conflict with this act are hereby repealed.

JUVENILE SMOKING.—Owing to the increase of juvenile smoking in this country, the Society against the Use of Tobacco has taken steps to obtain a law to prevent children from smoking. It founds its arguments on a series of observations which have recently been made. Of thirty-eight young smokers, aged from nine to fifteen years, it was found that twenty-seven experienced a certain degree of malaise, and twelve, seriously affected, had contracted the germs of grave maladies.

A Letter Relating to Pil. Antiseptic and Antiseptic Comp.

The late eminent physician and most acute observer, Dr. Austin Flint, Sr., has said—"Physicians are often consulted by patients, who, although far from being well, have no well-defined malady. They complain of languor, lassitude, want of buoyancy, aching of the limbs and mental depression. They are wakeful during the night and enter upon their daily pursuits with a sense of fatigue."

"An investigation of the different organs of the body reveals no evidence of disease, the lungs, heart and kidneys are sound. Some of the affections embraced in the posological catalogue may be discovered, yet the morbid condition is real." Hardly a practicing physician will read the above without recalling at once a number of cases with the identical symptoms as given by Dr. Flint. He will also remember how stubbornly such cases have resisted all the usual remedies, and dietetic precautions. Now what is the trouble and what the remedy? The trouble is simply chronic blood poisoning from Malaria, sewer gas, or what is far more likely from the products of a defective assimilation of food in the blood circulation. The remedy lies in first destroying these ptomaines, and for this there is no better or more quickly acting remedy than Pil. Antiseptic, made by Warner & Co., as any intelligent physician will see at a glance on noting its composition or he will realize happily upon prescribing the remedy. This is not theory, but fact tested by experience.—Dr. F. S. GRANT.

WARNER & CO.'S **PIL: ANTISEPTIC.**

Each Pill contains
Sulphite Soda, 1 gr. Salicylic Acid, 1 gr.
Ext. Nuc. Vomica, $\frac{1}{2}$ gr.

DOSE.—1 to 3 Pills.

Pil. Antiseptic is prescribed with great advantage in cases of Dyspepsia attended with acid stomach and enfeebled digestion following excessive indulgence in eating or drinking. It is used with advantage in Rheumatism.

WARNER & CO.'S **Pil: Antiseptic Comp.**

Each Pill contains
Sulphite Soda, 1 gr. Salicylic Acid, 1 gr.
Ext. Nuc. Vomica, $\frac{1}{2}$ gr. Powd. Capsicum, 1-10 gr.
Conc't Pepsin, 1 gr.

DOSE.—1 to 3 Pills.

Pil. Antiseptic Comp. is prescribed with great advantage in cases of Dyspepsia, Indigestion and Malassimilation of Food.

Prepared by

WILLIAM R. WARNER & CO.,
Manufacturers of

Soluble Coated Pills, Parvules and Granules,

PHILADELPHIA.

NEW YORK.

SUPPLIED BY ALL DRUGGISTS.

"NORTH CAPE" NORWEGIAN COD LIVER OIL. IN STONE BOTTLES, Pints and Quarts.

This Oil is very carefully made from the finest fresh livers and from the time of its production is kept totally excluded from LIGHT—a course that has been proved necessary to retain the entire medicinal value of the Oil.

On this account it will be found infinitely superior in palatability and digestibility and in all cases where its use is indicated, positive benefit quickly follows its administration.

COD LIVER OIL DETERIORATES RAPIDLY WHEN EXPOSED TO LIGHT.

THE "NORTH CAPE" IS CAREFULLY PROTECTED FROM LIGHT, AND WILL REMAIN FRESH AND SWEET INDEFINITELY.

*To avoid confusion and to insure satisfaction be particular to specify
"NORTH CAPE" Cod Liver Oil.*

Imported by **JOHN C. BAKER & CO.,** 815 Filbert Street,
PHILADELPHIA.

THE ANNALS OF HYGIENE.

VOL. IV.

PHILADELPHIA, FEBRUARY 1, 1889.

No. 2.

COMMUNICATIONS.

HEALTHY HOUSE BUILDING.

BY C. FRANCIS OSBORNE,

Consulting Architect, Cornell University, Ithica,
New York.

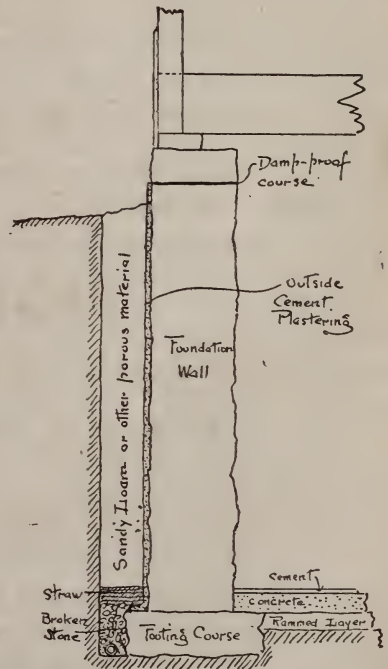
(Continued from page 3.)

The hygienist, desiring to ensure the building of a wholesome dwelling house, might well exclaim (in paraphrase of a famous saying) "let me build the foundations, and I care not who builds the superstructure!" For it is here that we come in contact with mother earth who is quick to resent and punish carelessness or criminal ignorance. Within our cellar walls, too, we place our apparatus for heating and ventilating our living rooms, for disconnecting our plumbing system from the public sewer or private cess-pool, and here too, finally, we store to some extent, at least, our food supplies, under wholesome or unwholesome conditions as we ourselves shall pre-determine. We may say then, with the greatest possible emphasis, there is no other one thing of so much consequence in the internal economy of the healthy house as a dry and well lighted cellar. I now propose to show, as clearly as possible, how this may be secured.

As to dryness we have two things to guard against—the inflow of surface water and the upflow of ground water. To guard against the former proceed as follows:

Let the excavation for the cellar be

made eight or ten inches wider all around than the outside face of the cellar walls, and see that the bottom of the excavation outside the walls is graded with a *continuous* but slight fall to one or more outlet trenches, (according to the size of the house), placed at the lowest point of the site. Take



particular care that this outside drain nowhere rises above the level of the cellar floor at its highest points, nor nowhere falls below the bottom of the footing course at its lowest points. A fall of one-eighth of an inch to the foot is quite sufficient if continuous. For a small or moderate sized house fill the bottom of the trench with broken stone

chips or coarse gravel to the depth of about one foot. Cover these with a thick layer of coarse straw or hay and fill the trench to the top with sandy loam, coarse sand, on all the porous material. If sand is used for refilling, the first twelve or fourteen inches above the straw should be of porous loam, to prevent the sand from being washed down into the bottom of this trench. For larger houses, or where it is desired to ensure the utmost efficiency of this surface water drain, two inch porous tile with water proof building paper joint covers should be placed under the broken stone. Before the trench is filled up the outside face of the foundation should be examined to see whether all outside joints have been filled with mortar so as to leave no depressions for holding water. This in fact should be attended to as the wall is building. The outside face of the wall should, in all respects, be as smooth as the inside. The mortar for foundations should contain not less than one-fourth part of cement, as quick-lime mortar will not become hard in the presence of dampness. If the expense be not an objection, the whole outside face of the cellar walls should be plastered with a coating composed of equal parts of cement and sand without quick-lime. This will *ensure*, with the outside trench, a perfectly dry wall. If this plastering is to be used, the outside joints of the stone wall should not in that case be filled with mortar to an even surface, as depressions are desirable to give the cement coating a better hold. Hard stone is the only material suitable for foundations as brick is too absorbent, even after every precaution is taken. The outlet trench should be continued until it comes to the surface with the fall of the ground. If this

cannot be managed expert advice should be taken as to the best treatment under the circumstances, as experience is needed in the effectual treatment of special cases. If the soil is porous the trench might terminate in a special leaching cess-pool, provided the trench can enter the cess-pool above high-ground water mark.

(To be Continued.)

THE WATER SUPPLY OF CLEVELAND.*

BY PROF. ALBERT W. SMITH.
CLEVELAND, OHIO.

The water-works of Cleveland, beginning in 1856, with a plant costing a half-million dollars, and capable of supplying seven and a half million gallons of water daily, have grown as the city's necessities have required, until, when the improvements already under way are completed, they will be able to supply seventy million gallons daily and will have a total value of five and a half million dollars, or about ten times the capacity and cost of the original plant. The water was taken from a point about three hundred feet from shore during the first fourteen years, until the necessity of a purer supply became so apparent that a tunnel was commenced under the lake, the intake to be about six thousand feet from shore, and about a mile to the west of the mouth of Cuyahoga river. This tunnel has a maximum capacity of forty million gallons daily and has been in constant use since 1874. The larger portion of the city is now supplied directly from the pumps, the surplus water flowing into two large

* A paper read before the sixth annual meeting of the Ohio State Sanitary Association.

reservoirs having a combined capacity of eighty million gallons. These serve the purposes of acting as storage basins for surplus water, to equalize pressure from the pumps, and to supply certain higher portions of the city.

Although there is such an ample supply of lake-water, six thousand wells are still in use within the city limits. The quality of water in a shallow well in a crowded city quarter is too self-evident to need discussion. Part of these wells are situated in districts where the general supply has not yet been placed, but many are in streets where lake-water might be had.

During the last two years the lake-water supply has received an extensive and careful examination from a chemical standpoint, both as it is supplied to consumers and as to its character in the lake. For several months weekly analyses were made of the water as it comes from the hydrants, with a careful examination of the matter held in suspension, or the sedimentary material. This investigation was principally under the direction of the Cleveland Board of Health. For several years past the city's demands have nearly reached the maximum capacity of the present supplying tunnel, and last March a new tunnel was contracted for, to have a capacity of one hundred and ten million gallons daily. Before determining the location of the point of intake for this new tunnel, the Board of Water Works Trustees caused numerous analyses of the lake-water to be made, of samples taken from the lake at different points along the city front, and at different distances from shore. The object was to determine where the purest supply

might be had. At the points determined upon, samples were collected directly from the lake into glass-stoppered bottles, on five different days, with varying conditions of wind and temperature. The samples were sent at once to the Chemical Laboratory of the Case School of Applied Sciences, where the analyses were made as soon as possible after their receipt. The determinations made with each sample were the total nitrogen evolved as ammonia by heating with an alkaline permanganate solution, the free ammonia, the chlorine, the amount of oxygen consumed (permanganate process), and the total solid residue. The manner of conducting these determinations was similar to that recommended by the National Board of Health in its report of 1882. In estimating the amount of ammonia and of oxygen consumed, a difference in the time of heating was found to materially influence the values obtained, so that it was highly essential, if exact comparisons of results were to be made, to keep all conditions of time and temperature perfectly uniform. When free and albuminoid ammonia are determined according to Wanklyn's method, a considerable loss of nitrogen usually results, and this is increased materially if the distillation is rapid and the condensing water warmer than 10° C. More correct results may be obtained by determining the free ammonia in one portion of the sample and the total in a second portion, conducting the distillation slowly and using cold water for condensing. Another source of loss often overlooked in this determination is due to the fact that in waters of the character of that of Lake Erie, nitrogenous substances exist which are not discovered by this

process, and remain in the retort unaccounted for. The amount of this loss is reduced also by slow distillation.

Several methods have been suggested and used by which to determine the reducing power of a water sample, or the amount of oxygen consumed by treating with permanganate; allowing the water to stand at ordinary temperature with an excess of the re-agent for one, three or twenty-four hours, boiling ten minutes with an excess of permanganate, or boiling the sample until it is reduced nearly to dryness. The values obtained in this determination depend materially upon the manner of conducting the analysis. Thus in different portions of the same sample of lake-water, treating with an excess of potassic-permanganate one hour at 20° C. (Tidy's method), 0.56 parts of oxygen per million were consumed; in three hours 0.80 parts; in twenty-four hours, 1.70 parts; by boiling ten minutes (Kubel's method), 2.40 parts; by evaporating nearly to dryness, 4.30 parts. By the use of all these methods the best knowledge may be had as to the nature of the organic matter present, when their results are taken in connection with the amount of organic nitrogen. The amount of chlorine is most easily and accurately determined by treating with silver nitrate and ammoniac sulphocyanate solutions, with ferric alum as indicator (Volhard's method). Nitrous acid has never been detected in any of the samples of lake-water, though tested for by exceedingly delicate azobenzol-naphthylanm reaction. Nitrates are only present in quantities barely sufficient for detection by any method in use at present.

From the results of a chemical

analysis of water it is impossible to decide whether the supply is absolutely free from dangerous material and disease-causing germs, or that it will actually cause disease if used, but two important conclusions may be drawn; first, as to whether the water is at present contaminated by animal and vegetable refuse; and second, whether it has been so contaminated in the past and this impurity removed by oxidation, etc. A large proportion of organic nitrogen, as indicated by the ammonia process, and a marked reducing power towards permanganate, revealed the presence of unoxidized organic contamination. A similar result in regard to nitrous and nitric acid and free ammonia, indicates that the water has been so contaminated in the past. By a thorough knowledge of all the surroundings and conditions of the source of the supply and careful attention to the details of the analytical results, many other incidental conclusions may be ascertained. The results of analysis of one class of waters cannot properly be compared with those of any other class, hence no general standard of purity can be arbitrarily stated. Thus, certain results as to the chemical character of a deep well-water, for example, might properly classify it as entirely harmless, while the same results, obtained from a shallow well or lake would show it beyond doubt to be contaminated. In order to obtain a standard of purity with which to compare the character of the Cleveland supply, analyses were made of samples taken fifteen miles from shore. This represented the chemical nature of the best supply accessible to the city, and showed the quality of the lake-water when least modified by shore influences. The results of all

investigations of the subject so far completed indicate several conclusions: The Cleveland water supply is at all times *slightly* contaminated by the city's refuse which is allowed to enter the lake. This is shown by the fact that all impurities determined are from twenty to sixty per cent. higher in the city's supply than in the lake-water fifteen miles from shore, and that the solid residue upon ignition emits the disagreeable fumes of burning animal matter. At certain occasional times of especially high current in the river, this contamination takes place to a noticeable extent. That this contact with the river water under such circumstances is direct, is shown by a large increase of chlorine in the samples analyzed and an occasional perceptible taste and smell of petroleum oil. Under all circumstances the water becomes purer as the distance from shore increases. There appears to be a general easterly current in the lake, and the water two miles west from the river's mouth was found much better than at a similar distance to the east. There is little doubt but that a much better supply than the present could be obtained by extending the tunnel westward from its proposed limit and further from shore. Freeing the river from its present great load of sewage would also materially improve the quality of the city supply and this improvement, now under consideration, may be all that is needed. It is a noticeable characteristic of the lake-water that it contains nitrogenous material which is decomposed with great difficulty, and also substances of an opposite character which are broken up and evolve ammonia by simple boiling. This is shown by the manner of evolution of ammonia in the total nitrogen and free

ammonia determinations, and also by the rate at which the permanganate is reduced in determining the amount of oxygen consumed.

It is always difficult to present the results of a series of water analyses in such a way that they may be comprehended and appreciated by a person who has had no chemical training. The following method was adopted in the report to the Board of Water Works Trustees: The results of the total ammonia, oxygen, chlorine and solids determinations were multiplied by factors that made them numbers of about the same magnitude, the average of the products taken and compared by an arbitrary scale of distances. The factors selected in this case were, for total ammonia 100, for chlorine 10, for oxygen 5 and for suspended matter 0.5. This method of comparison has been applied to the water supplies of several American cities, from figures calculated from the results of analyses published in the report of the National Board of Health, with the following results:

Lake Erie, 15 miles from shore, . . .	14.5
Lake Portland, Baltimore supply, . .	16.2
Lake Michigan, Chicago " . . .	17.0
Cisterns, New Orleans " . . .	18.9
Croton River, New York " . . .	19.2
Lake Erie, Cleveland " . . .	19.8
James River, Richmond " . . .	31.1
Cochituate River, Boston " . . .	35.0
Schuylkill River, Philadelphia " . .	37.6
Potomac River, Washington " . . .	45.9
Mississippi River, New Orleans " . .	72.3

In this list Lake Erie's water when uncontaminated stands first and the Cleveland supply the sixth in sanitary value.

CONSTIPATION OF INFANTS.—Prof. Parvin recommends, as a simple expedient, rubbing the abdomen with a little sweet oil.

THE WATER SUPPLY OF CANTON, OHIO.¹

BY JOSIAH HARTZELL, ESQ.

The water used in Canton for drinking and culinary purposes is derived from four sources, viz.: cisterns, an artesian well, surface wells, and the Nimishillen creek.

RAIN WATER.

In the comparatively few cases where rain water is used, the cisterns, always made of brick and cemented, are provided with filters, which are made in various ways.

The commonest way is to have a box filled with sand or coke, near the surface of the ground, through which the water must pass before entering the cistern. Such water is strained rather than filtered.

Some cisterns have their interior areas divided into two nearly equal parts by a brick partition wall. In some of these the water runs in on one side, passing to the other side, through, and being filtered, or rather strained by the brick wall.

The principal disadvantage of the brick wall filter is that the organic matters held back by it cling to its sides, remaining under water long enough to admit of chemical changes which produce new compounds that the brick filter is powerless to arrest.

In the course of time, these new ingredients make their presence perceptible by their odor and taste, and, by and by, the water becomes unfit for use. Cleaning the cistern frequently remedies this difficulty very considerably.

In other cisterns of this class, the

brick partition wall is made impervious to water from top to bottom, in the same manner as the sides of the cistern, viz., by coating the same with cement.

A brick or two, is, however, left out of the bottom course of the partition wall, and through these orifices there is free communication between the two halves of the cistern. One of these halves, or sides, is then filled with filtering material, gravel, coke, and sand, to the depth of some feet. The water being introduced on this side, has to descend through the filter bed to the bottom where it reaches the holes in the wall, and passes over into the clean water reservoir. This kind of a cistern will furnish very clean rain water for an indefinite time. It is, however, liable to the same objection as the brick wall filter, viz., the impurities held back by the filter remain, and are more or less prone to decomposition, under water.

In a few instances the cisterns for the storage of clean water are made as much as sixteen to twenty feet deep. Alongside is made another cistern not more than eight feet deep, the latter being filled, or partially filled, with the filtering material. The water passes first through, and is filtered by the smaller cistern, and then passes, by a pipe connection, into the storage cistern. Even in this case the filtering material should be renewed occasionally, and the storage cistern cleaned. With very little attention the water furnished by such a cistern leaves nothing better to be desired.

ARTESIAN WELL.

About two hundred and fifty families get their drinking water from an artesian well, which was bored in 1884, under the superintendence of Mr. C.

¹ Read before the Ohio Sanitary Association at Canton.

W. Chapman, in quest of natural gas. Its depth is 2720 feet, but the water which flows out at the surface, was struck at the depth of 110 feet. Mr. Chapman informs me that the material in which the water was found was coarse sand rock, twenty feet thick. The overlying rocks, are, first, an argillaceous shale, forty feet thick; then a ferruginous sand rock seam three feet thick; then a body of slate and fine clay, eighteen feet thick, and reaching to the bottom of the drive-pipe. The overflow of this water, before the casing was put in, was about forty gallons per minute. The actual present overflow is considerably less than that; and this overflow varies, in amount, considerably, with the seasons of the year.

The water from this well first attained its very considerable popularity by its obvious purity, and its gratefully pleasant taste; also by reason of that salutary common sense which is beginning to make a good many people more and more observant of those phenomena which may affect their physical well being.

A water which, when looked at against a back-ground of pure white, and also of pure black, satisfies the eye; and which, when stoppered up in a clean jug, and left to stand in a warm place for several days, also gets a clean bill from the nose, has a start in the race of no mean importance. Measured by no other standard, most of the water in use would be rejected, or used only after boiling or filtering.

The application of these and other simple tests, however, only confirmed the excellence of the water from the Chapman well.

This opinion was farther confirmed, and in the most positive manner, by a

chemical and sanitary analysis, made by Herbert H. Dow, Chemical Analyst, of the Case School of Applied Science, of Cleveland, Ohio, which reads as follows:

SANITARY ANALYSIS OF WATER FROM
DEEP WELL AT CANTON, OHIO.

Water nearly colorless and tasteless.

	Parts per million.
Total solids	223.0
Loss by Ignition	33.0
Nitrogen as Nitrates	0.210
" " Nitrites	none.
Free ammonia	0.058
Albumenoid ammonia	0.052
Oxygen consumed at 20 deg. 1 hr. (Tidy) .	0.40
" " " 20 " 24 " " "	0.70
" " boiling 10 min. (Kubel)	0.70
Lithium chloride present but not estimated.	

To the above analysis Mr. Dow appends the following explanatory observations:

"The very small amount of oxygen consumed by the Kubel and Tidy processes; the low amounts of nitrates and albumenoid ammonia; the entire absence of nitrites, and the fact that no blackening is observed on ignition of the solid residue, prove this water to be one of exceptional purity. The almost entire freedom of this water from organic contamination, and its deep-seated origin, render this a well, as a source of drinking water, of inestimable value to those who understand and appreciate the danger and frequent occurrence of an impure supply. The proportion of lithium which it contains will recommend it to those, also, who desire a water containing this valuable medicinal agent."

HERBERT H. DOW, B. S., *Analyst*.

Speaking of this water, Albert N. Smith, B. S., professor of Chemistry and Metallurgy in the Case School, says: "It is the purest water ever analyzed in this laboratory."

WELL WATER.

More than half the water for domestic uses in Canton, is still obtained from wells. People cling to their wells from habit, although the wisdom of so doing, at least in certain quarters, is open to grave question. Not a little sickness of zymotic character, has been attributed to the use of this water. The water derived from these wells was formerly of exceptional excellence.

It is found at depths varying from a few feet, in the Southern part of the city, to sixty feet in the Northern section. The water here is highest at the North, from which direction the subterranean stream flows Southward, percolating through the gravel stratum under the city, and often issuing at South, and Southwestwardly localities, either in the form of large flowing springs, or into low lands which are thereby kept in a wet and swampy state by continual absorption. Owing to the presence of calcareous rocks in the vicinity, this water is moderately hard.

The sewage and house waste have heretofore generally gone into leeching cesspools dug at some point on the householder's lot. In the more thickly settled parts of the city, the thickness of the sand and gravel between cesspool and water-seam, has, until within a few years, conferred a degree of protection upon the latter. But with the influx of population, the addition of manufacturing wastes, and more than all the rest, the introduction of a water supply system, the straining capacity of the soil has been over-taxed. Sewage-laden water has, year by year, sunk deeper and deeper, until, in many places, the water has been reached and polluted, water in wells as much as

fifty feet deep, smelling foully when first pumped, and becoming exceedingly offensive when allowed to stand for a time in a warm place. A number of such wells have been abandoned, and many more ought to be. Generally speaking, the wells to the North of the city, furnish fairly good water, while that obtained in the Southern and Central parts is bad, some of it very bad.

CITY WATER WORKS.

The water supply of the city is driven through the mains by two Worthington direct-acting pumps, of two-millions and three-millions daily capacity, respectively. Over twenty-five miles of cast-iron mains are in use. The attachments number 1625 in all, of which 200 have been made since March 1st, last.

MYER'S LAKE.

Water was first supplied to the city by the Canton Water Works, in 1870. From that date until 1881, the supply was obtained from Myer's lake. In 1881, owing to the subsidence of the water level, and the threatened consequent impairment of the property for amusement purposes, the proprietor of the lake got out an injunction against the farther use of the lake as a source of city water supply.

As a source of supply for drinking water, Myers' Lake, must, sanitarily considered, at least during the summer and fall months, be regarded as a stagnant pool. The water, it is true, arises from deep spring sources, but during the portions of the year above named, this supply is not sufficiently abundant to keep good the surface evaporation. There is no over-flow at the outlet, hence the purifying effects of a current through the lake of new fresh water

are absent. On the entire circumference of the lake, a distance of several miles, there are only a few rods of clean gravelly margin. Swampy lands and black mud, the favorite propagating grounds of the water-lily and of other multitudinous aquatic growths deeply coat the edges and bottom of the lake basin. On summer evenings, large surfaces are covered with bubbles, showing the ascent of the gases of decay.

NIMISHILLEN CREEK.

The water furnished to the city, has, since the Lake source was abandoned, been obtained from the West branch of the Nimishillen Creek. This is a spring stream. In respect to quantity it is a very safe, all-the-year around reliance for a city considerably larger than Canton. Arising, as this water does, from the water-bearing gravel seam, it is, like our lake and well waters, somewhat hard, and like them, it is, primarily, of excellent quality. It suffers from two causes.

Its flow is arrested at several points by dams. These places inevitably become the receptacles of organic matters, and of accumulations that are highly favorable to the growth of substances, which, considered as food and drink, are both offensive and hurtful.

Another source of detriment is that the creek, and in a large part of its course, the supply race, receive the surplus rain-flow of considerable areas. Over part of this area, consisting of hills, this flow of rain water oftentimes becomes quite active, washing down into the stream house and farm wastes that should be sedulously kept out.

Both of these, the two obvious sources of contamination, can be

cured, and it is to be hoped they will be in the near future.

EFFORTS TO OBTAIN BETTER WATER.

The need of purer water is generally recognized. During the past summer, the Water Works Trustees have caused to be bored an artesian well near the pumping station. This well passed through about forty feet of alluvium, and 160 feet of rock. Flowing water was reached in loose sand rock, at the depth of 140 feet. Through a $3\frac{1}{2}$ inch pipe, the flow, at the depth of eighteen feet, is thirty gallons per minute, or 1,800 gallons per hour.

The fact that the water-bearing stratum at this point is found at relatively the same depth as in the Chapman well, and considering the similarity of the rock formations in which the water is found, and the strong resemblance of these waters in respect to quality, the probability of their common origin easily suggests itself. Two more wells of larger diameter are to be sunk near the first one, with a view to ascertaining whether a supply adequate to the wants of the city can thus be obtained.

The methods that might be recommended for the improvement of the quality of the water furnished to the city, are not within the proper scope of this paper. Many big books would not contain all that might be said on this subject. Therefore, feeling that I am standing on the very brink of that great sea of modern literature which is devoted to dissertations upon Water Purification, and fearing, quite as much for your sake as mine, to so little as touch the gates that hold back such an interminable flood, I will only add, "Pray have me excused."

THE CONTAGION OF HEALTH.*

BY PROF. J. J. BURNS,

Superintendent of Instruction, Canton, Ohio.

One of the easiest things in the world is to accept an invitation. It makes scarce any demand upon the cerebrum, and the amount of voluntary muscular action may be noted at zero. The subject feels flattered at the *prima facie* evidence that some one thinks him worthy a place on the programme, and the reply of acceptance is sent out from a ganglion located hard by the bump of self-conceit—a beautiful but somewhat presumptuous example of reflex action. And when the higher court of intelligence comes to review this common pleas decision it finds that although the lower court had no jurisdiction the case is beyond recall, or remedy.

In this ponderous way I admit the rashness of my promise to your committee, in view of the scant time I have for anything outside my own special line of duty, and the more scant experience I have had in dealing with such topics as properly come before this body.

Brevity, must be my defense; and this seems the more overwhelmingly in place, when I consider what vast and varied fields of human knowledge and action the medical profession must cultivate, and how they must grudge the time spent in listening to a layman who at most has not done more than take an occasional peep through the fence.

I have been credibly informed that the modern medical practitioner "must be prepared with the latest methods of

of staining the turbercle bacillus; must be able to diagnose under the microscope an alveolar carcinoma from an alveolar cancer; should be accustomed to recognize with the ophthalmoscope the earliest stage of an optic atrophy, and to diagnose with the laryngoscope paralysis of one vocal cord; to describe fully the electrical reactions of a degenerated muscle, and withal to keep accurately in mind the process of karyokinesis of a nucleus, and the life history of *filaria sanguinis hominis*, and the dissolution of a uterine fibroid by electricity," and this is not telling the half of it.

Small wonder is it that doctors are busy men, have no time to visit our schools, join in no general rush to evening prayer meetings, and even when you want one to make you a little call, he sends around a notice by and by to remind you that he did call.

Returning to my theme, one of the nouns substantive is the word 'health.' I do not know what the technical definition of this term may be, but in my thinking it means a freedom from bodily pain, a serene unconsciousness of stomach, liver, joints, brain, membranes, and so following—like the happy man who didn't know he had a system—a sort of pervasive it-is-good-to-be feeling arising from a normal action of all organic functions; a satisfaction with nature around us supported by a belief that the world is a success, excepting, of course, the little matter of ventilation, and is not an empty show for man's illusion, or delusion, given; an ability to use with some degree of force the powers somewhat vaguely called mental faculties—memory, judgment, imagination—with a moderately sensitive emotional nature and a somewhat sturdy will, with

* Read before the Ohio State Sanitary Association at Canton, Ohio.

a star of hope above the horizon, and a belief that it is a real star.

It may be said that I am laboring to analyze happiness instead of health. I shall not defend myself but wish to affirm that as a rule these two are one, or are interconvertible. I give my poorer relation a thanksgiving turkey if I do give him the money which will bring the turkey. *Sana mens in sana corpore* is, according to wise John Locke, a short but complete definition of happiness in this world.

But my alleged topic implies that this state or condition called health is contagious, catching. Every one believes that disease, at least that certain diseases, like certain running vines, reach out for a new site into which to plant fresh roots and thus to multiply upon the face of the earth. I have a pleasant notion that health does the same. I do not intend to theorize upon the point but I believe that when two persons remain a while in each other's company each receives some influence from the other, the stronger nature giving out more than it takes in. Probably it is not more strange than that the pendulum of two clocks hanging against the same wall should tend toward coincidence of vibration.

If I go into the swamps of Louisiana and come back with "swamp fever," I say "I caught it," or, if I remain too long in the air of a room where some one is ill with what the doctors call a contagious disease, I am in danger of becoming a victim to the same ailment. I shall have "caught" it again.

Why not then, when I go to Colorado sick and come home in health, say I have "caught" it. "It" crept through the eye into the soul, as well as through the lungs into the blood ;

or, if when suffering from the "blues," I fall in company with one who overflows with life and enjoyment, and the physical result is a quicker pulse and a better appetite with their sequent spiritual blessings, why not be as ready to credit contagion as in the other case we are to charge it.

Herbert Spencer says that happiness is the best of tonics. Cheerfulness is contagious, or infectious as you please, and cheerfulness begets health and health begets cheerfulness. *Ergo* health is contagious, and the title of my brief paper is justified, and it might read "The Duty of Cheerfulness,"

In regard to this primal duty, I think its claims upon humanity are coming into more general recognition. It is no longer a mark of piety to be sad-visaged ; which is rather an indication of the state of the liver than of the soul, only so far as the spirit conspires with the flesh.

So far is melancholy being differentiated from religion that in my church paper, *The Interior*, Presbyterian, blue, I read last Sunday an article contending for the affirmation of the question "Does God Approve Humor?" Here is a change from the time when Auld Rob sang of those

"Who hold the notion,
That sullen gloom is sterling true devotion."

The same fetish is being cast down from his throne in the kingdom of society and it is now actually fashionable to have muscles and appetites.

Yet in every community there is a kind of folk who need conversion to the gospel of health—people whose theory of the universe is that it is a place where there is an unlimited variety of diseases to be caught, and that man is pre-eminently the disease catching animal, and that he is endowed with

the faculty of speech mainly that he may make known the history of his disorders past, present, and prospective ; and that sociability rightly defined is an interchange of these histories. These people would not be well, and thus lose their, perhaps, only point of interest to their kindred spirits, a little less than kin and a good deal less than kind ; and they suggest not the fierceness but the dolefulness of Richard's

"By heavens, I'll hate him everlastingly,"

"That bids me be of comfort any more."

It should be regarded as an offense against the public good as it is an offense against good taste, for A to take in seriousness B's question,— "How's your health," and to give a circumstantial and illustrative reply, unless B is A's physician, and even in that case B is rather expected to earn his fee by making his own diagnosis ; and I have noticed that doctors are less likely than other men to put this question.

My view of this practice arises not from a lack of sympathy with my fellow man, likewise my sister woman, but from an excess of it ; and that same virtue leads me to think that some repressive measures should be taken with the man who is always seeing death in the pot and tragically persists in raising the lid. For an example, and I'll not contravene my own doctrine by relating anything which would tend to repress the circulation. Mr. Firedamp in Crotchett Castle interrupted the cheerful dinner-table controversies to announce that "there is a question greater than all these, seeing that it is necessary to be alive in order to settle any questions ; and this is the question of water against human life. Wherever there is water, there is *malaria*, and wherever there is *malaria*,

there are the seeds of death. The great object of a wise man should be to live on a gravelly hill without so much as a duck-pond within ten miles of him. The sun sucks up infection from water wherever it exists on the face of the earth." He was here interrupted by the Rev. Dr. Folliott, who affirmed that "the proximity of wine was, just then, of much more importance than the longinquity of water."

One noble source of health to the living soul, and by a subtle but not the less real contagion to the living body is found in what we call nature—the great out-door world, the lofty mountain, the peaceful valley, the billowy ocean and the calmly flowing river, the star-spangled sky, the daisy-dotted prairie, the century-living oak, the primrose by the river's brim, the hour when parting day dies like the dolphin, and the hour when the God of the storms is abroad in his might,—each of these and countless others in nature's great medicine chest is in its proper season "the soverign'st thing on earth for an inward bruise." This is not fancy but a truth proved in the experience of unnumbered mortals.

Some one has said that every hearty laugh draws a nail from the laughter's coffin, thus postponing what Gray calls the "inevitable hour" when the coffin shall be needed. Such an arterial stimulant is diaphragm-shaking humor, that what Burns sings "Out owre a glass o' whisky-punch" about John Barleycorn, may more truly be said of it :

"Food fills the wame, an' keeps us livin',

"Tho' life's a gift no worth receivin',

"When heavy dragged wi' pine and grievin' ;

"But oiled by thee,

"The wheels of life gae down-hill, scrievin'

"Wi' rattlin' glee."

I think humanity is not keenly alive to the debt that tired nature, and blue nature owe to the guild of humorists. If he is a public benefactor who makes two blades of grass where but one grew before, what is he who makes a flower of joy spring upon the grave of a groan?

May the followers of Mark Tapley increase in number, and those who can appreciate Josh Billings's assertion that the "best cure for rumatiz is to be thankful it isn't the gout."

Perhaps not entirely malapropos is the account of his physician given lately by Mr. William Nye: "He was a good doctor for horses, but he was out of his sphere when he strove to fool with the human frame. Change of scene and rest were his favorite prescriptions. Most of his patients got both, especially rest, a long unbroken rest. That is his specialty. He did not know what was the matter with me, but he seemed willing to learn."

It is not a new thought that music, though addressed to the spirit through the sense of hearing, affects also the body, and the man is not of woman born whose fatigue upon the march is not partly counteracted by the "ear-piercing fife and the spirit-stirring drum." However, I had no wish to give an impulse to this kind of music. It is not so popular a doctrine that study, hard, earnest, honest brain wrestling, that medicinal stirring of the soul's waters which is the choicest boon that man can give to man benefits not the mental nature alone, but the physical nature also. I do not mean that fussing and worrying over lessons are health-giving. The two things are radically different. They are incompatible; and it is sometimes sadly amusing to learn that some young

fashionable Miss, whose name is on the school roll, is injuring herself by hard study, when we know too well that of this offense, at least, the dear girl is innocent as Mary's school-going lamb.

Unless the doctrine of this paper is all at fault, unless man is less an imitative animal than his history seems to show, unless the notion is false that we tend to grow like our divinities, a public is to be congratulated when its heroes, big and little, its prominent men, its leaders of fashion, are not only wise, and honest, and virtuous, but also healthy and sunny-tempered, who prefer *L' Allegro* to *Il Penseroso* in work-a-day prose, though the last-named is the finer poem.

And now, without any summing up, for I fear to see how small a handful I have gleaned in a sort of common between my field and my neighbor's, and to quit where charity, kind soul, is said to begin, I desire to say that the most indispensable possessions of a teacher of youth are good health and a cheerful happy temper.

The State demands certain evidences concerning the teacher's mental abilities and the surface indications of his moral character. Have I not pointed to another matter worthy of testing? The steady uninterrupted influence of what he *is* upon the mental and physical traits of his pupils? Does he on account of an unfortunate selection of parents, or, of something sinister in his education bring to his flock each day a bushel of sour fruit picked at night, and from the wintry side of the tree of knowledge, or gathered from the southern branches when the sun was at high noon?

Is he well, with all that implies of weal or woe to his little kingdom?

Did he enjoy quiet communion with nature's sweet restorer? Has he had a good breakfast, and, upon reconsideration, is he still glad he ate it? Or, has he dyspepsia, or insomnia, or malaria? or an aching void in the cerebral cavity this world can never fill?

Guatemozin smiled on burning coals, some poet said, but the descendants of the Mexican chief are not among us to-day.

If the applicant for a certificate does not know how to extract square root, he can learn; if he offends the minor moralities by smoking cigars, and using an occasional o'eremphatic word, he can quit it; but if he is gloomy and "cross," and carries a frown on his brow to match the frown in his disposition, from such may the Turk, the comet, or the Good Board of Education deliver us!

CONSUMPTION AND THE HOG.

BY JANE ELLIS JOY,
OF PHILADELPHIA.

Two statements in Dr. Pepper's report of the causes of consumption of the lungs, lately published in the *New York Medical Classics*, should be as interesting to the public in general as to physicians and scientists.

One of these statements is to the effect that the Jews are almost exempt from the disease; the other is that the negro is more predisposed to it than the white race.

Simple and easily verified as these announcements are, they seem to the lay mind, at least, and especially when taken in connection, more important than anything that this distinguished authority sets forth in his valuable paper in regard to dampness, atmos-

pheric conditions, etc., as affecting the breathing organs. More important, because in the light reflected from them, the question, "What shall we eat?" will be seen, we think, to assume a new and most imperative significance.

The negro referred to by Dr. Pepper is presumably the negro of the United States. Now, when it is considered that the animal food of the ancestors of this race in slavery consisted almost exclusively of bacon and lard, and that the negro is still—as every housekeeper who employs this kind of help knows—notoriously fond of fresh pork and pastry into which lard enters largely as an ingredient; when it is considered further, that the uncivilized negro in his native Africa, who eats antelope, fish, nuts and fruit, enjoys (unless our authorities are gravely in error) rare immunity from lung disease, something more than a prejudice against the hog as a food animal takes possession of one. Why does the non-pork-eating Jew escape? He invariably chooses indoor occupation, and is usually a dweller in a large city, often in crowded districts, in narrow courts and alleys where there is scant sunshine, dampness and bad ventilation. He would seem in this way to be almost inviting the scrofulous affection; yet it passes him by. Why, we ask, unless it be that his apparently charmed life is a matter of diet?

This view is further substantiated by facts that lie within the observation of almost anyone. Take, for instance, the high percentage of deaths from consumption among the ill-conditioned classes in large cities, and, with the statistician's figure in mind, note what goes into the poor man's market-basket. We find the unthrifty wife or

mother at the butcher's stall. Choice cuts of beef and mutton, not to mention game and poultry, are, of course, out of the range of her pocket-book, and she has not the skill or modern utensils, perhaps, for rendering, say a round-steak or shoulder of mutton, tender and palatable. As a consequence, the pork-chops, savory and easily cooked, or the yet more savory sausage or "scrapple" is decided upon; and this, day after day, year after year, generation after generation. Or, let anyone curious to learn what finally becomes of the tons of lard annually disposed of to bakers and confectioners, stand at luncheon time near the door of some thriving grocer in a manufacturing center, and observe the array of young working girls and men hurrying in and out, each carrying away the familiar quarter of a pie.

Another link of suggestive evidence may be found in the statistical tables, which show that consumption frequently attacks persons of Irish and rural-English parentage. Need we dwell on the well-known facts that the accompaniment of the Irishman's potato is his rasher of bacon; that the English rustic relishes nothing better than pork-pie, and that among the farmers of our own land, pork, doughnuts and pie constitute staple articles of subsistence?

The history of the American Indian abounds with corroborative testimony to the same effect. So far as I have been able to discover, the red man knew not consumption until he came in contact with the white man's civilization; *i. e.*, the white man's hog. Dr. Daniel G. Brinton in a lecture delivered at the Academy of Natural Sciences, in Philadelphia, not long ago, stated as a remarkable fact, that the employ-

ment of Indians to do white men's work resulted in a high percentage of death among the Indians from consumption. The instance that he cited in particular was the work of packing fish in a Canadian sea-port town, where the death-rate from consumption reached seventy-five per cent. Here the reader of this article will be prepared to ask: "Was it the work of the white man or the food of the white man (which the Indian presumably ate while at work), that proved so destructive of life?"

It may perhaps be premature, especially as Dr. Pepper does not draw the inference for himself from his facts, to state in an article of this scope, that the hog is the source of consumption; yet, in view of the supporting evidence, who can doubt that the disease is closely related to the pork-eating habit? To the scientist, of course, must be left the burden of absolute proof—the finding of the particular microbe. Possibly he may discover with it a means of arresting its ravages. Until this is done, however, it might be well for the chemist of the kitchen to substitute, as far as possible, other meats for pork and other fats for lard. For, after all, it is the housekeeper to whom is entrusted the keys of life for her family.

ECONOMY IN STREET PAVING.—Mr. Rudolph Hering, C. E., is authority for the statement that the load which one horse can draw on an asphalt pavement, will require two horses on the best Belgian block, three horses on ordinary Belgian block, five and one-fifth horses on good cobble-stone and seven and four-fifths horses on bad cobble-stone.

HEALTHFUL HOMES.

BY GEORGE G. GROFF, M. D.,

OF LEWISBURG, PA.,

Member of the State Board of Health of Pennsylvania and acting President of Bucknell University.

(Continued from page 33.)

BED CHAMBERS.

These should be large, airy, light and pleasant as possible. Don't set aside the best room for guests. The bed chambers should not be on the first floor, on account of dampness. They should be a full story high. This costs but little more, and gives much more air space. They should be flooded with sunlight every day, and with fresh air night and day for those in good health. They should not be encumbered with unnecessary curtains, carpets, etc., etc. They should be kept perfectly clean. The beds, pillows, blankets, etc., should often be exposed all day to the sun. In our climate it is well to keep a blanket on the bed the whole year round.

A SICK ROOM OR NURSERY.

Where it is possible, one bed room should be set aside for the sick. It should be the lightest, airiest, most cheerful room in the house, with a southern exposure. It should have an open fireplace. The furniture should be sparing, but room not bare. In such a room, it is entirely possible to prevent the spread of measles, diphtheria, scarlet fever, etc., even in a large family of children. This sick room should be as much apart from the rest of the house as is possible, to ensure quietness to the patient, and to lessen the risk of contagion. The third story is a good place in which to locate the sick chamber.

VENTILATION.

In ordinary houses a great deal of fresh air enters through the chinks and crevices, but not enough. Living rooms should daily be thrown open, doors and windows, that all the stale air be swept out. The very best plan known for ventilating a home is to have *open fire places* in the rooms with a little fire in them. If possible, *have them in all living rooms and bed chambers*. Foul air is the great cause of disease of the respiratory organs. The sense of the smell is a good guide to the purity of the air in a house. It will occasionally be observed that a house has a peculiar odor, known as "house odor." It will generally be found that the inmates of such houses are in a state of chronic sickness. Possibly they are not very sick, but they are never entirely well. The rule is, such homes need more fresh air. They are foul and musty for want of it.

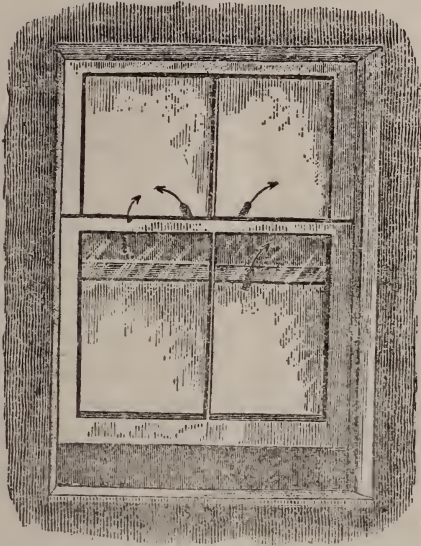
"In modern hygiene, nothing is more conclusively established, than the fact that vitiated atmospheres are the most fruitful of all sources of disease."
—*Playfair*.

"Headache, nausea, and lassitude, great debility, impaired digestion, severe colds, consumption and other diseases of the respiratory system, as well as other serious diseases, may be caused by confinement in the foul atmosphere of an unventilated room."
—*Dr. Frank Wells*.

"Though foul air is a slow poison, we must not forget that a blast of cold air may slay like a sword." *Dr. Angus Smith*.

Windows should not be lowered in cold weather when a draught of cold air may fall upon the head. Much fresh air may be introduced into a room

by placing boards¹ about six inches wide under the lower sash of each window in the room. A space will be



Showing manner of ventilating by inserting strip of wood beneath lower sash of window.

formed between the two sashes through which a stream of air will enter the room.

In connection with ventilation a suggestion might be made as to the use of the housetop. In eastern countries it has for centuries been the custom to use the roof or housetop as a sleeping place in warm weather. It has seemed to the speaker, that in our cities and villages, the same might be done in America, for the air would be coolest and purest, and nights of repose might be obtained where now is only obtained restless tossings and discomfort.

WARMING.

The healthful house is well warmed, not overheated, not cold. Where it can be afforded, it pays to warm the whole house, though bed chambers need only

have the chill taken from them. The chimney should *never be in the end of the house*, but pass up through the center. In this way, a great part of the heat ordinarily lost may be given out into the house. A stovepipe which enters the chimney a few feet from the stove or furnace probably carries off *one-half* the heat which the fuel produces. An excellent plan in small houses is to carry the stovepipe through the rooms above, and to let it enter the chimney only at the top of the house. Remember that the aged and the very young cannot stand changes of temperature as adults do, so when cold snaps occur, extra efforts should be made to warm the house. Where a hot-air furnace is used, if the cellar is kept clean as it should be, there is no objection to drawing the supply of air for the furnace directly from the cellar. The air in the cellar will find its way upstairs in any event. Likewise, there is no great loss in warming the cellar, for the air in the cellar warms the living rooms, and thence the whole house. In warming with stoves, hot-air furnaces and indirect radiation from steam, ventilation in a good degree is carried on at the same time, but by indirect radiation from steam pipes, there is no attempt in the system towards ventilation. Steam heating is the most unscientific of all modern methods of heating.

THE WATER SUPPLY.

Running streams and springs are the best sources of water supply, but they should be frequently examined to detect otherwise unsuspected causes of pollution, these most frequently coming from factories, slaughter-houses, and the sewage from hotels and farm houses. Especially should a town see to it that all forms of human excreta

¹ In place of the boards, screens covered with flannel have been successfully used.

are kept from polluting its drinking water.

Cisterns should be carefully built and covered so that no foul air can reach the water, or small animals or insects fall into them. The overflow pipes from cisterns should have no connection with any other pipes. Roofs and gutters should be frequently examined, and no water allowed to enter the cistern until they are well cleaned. Cistern water should be frequently examined and kept free from color, odor, and every other indication of impurity.

Wells are the most dangerous source of water supply, for very few wells in old settled districts are safe from surface pollution. In towns long founded, well water is almost certainly contaminated and unfit for human use. In the country, wells should be properly located so as not to receive surface drainage, especially not from the barnyard or privy. They should be walled up and so securely covered that mice, rats, toads, frogs and insects cannot enter and perish in the water, thus making it unfit for use. It has been the writer's experience that few wells are securely enough protected from small animals, while very many are contaminated from the barnyard, the privy, or by the refuse from the kitchen. It should be kept in mind that *very impure water is often bright, sparkling and tasteless.*

A simple method to test waters for impurities is to dissolve a lump of loaf sugar in a clean bottle filled with the suspected water; close the bottle with a close fitting glass stopper, and set it in the window where the sunlight will fall upon it. If the water remains bright and limpid after a week's exposure, it may be pronounced fit for

use. But if it becomes turbid during the week, it contains enough impurity to be unhealthy. Whenever it is necessary to use for drinking purposes a water suspected to be impure, it should always first be boiled thoroughly; and since boiled water is insipid to the taste, it may be flavored with tea or some other harmless substance. *In all cases, boil the suspected waters before using them.* In summer and autumn when waters are low they are generally most impure. When filters are used, it should be remembered that in time the filter itself will need cleaning. Such a contrivance as a self-cleaning filter is unknown.

Impure water affects domestic animals as well as man, and when used by cows contaminates seriously the milk. Wet weather ponds are not a fit source of water for milch cows. Milk also has great power to absorb deleterious gases and germs from the air (and thus becomes a common carrier of disease). A careful man will pay as much attention to the source and quality of the milk used by his household as to the water supply.

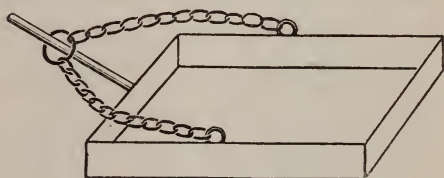
PLUMBING.

Have as little to do with the plumber's art in your house as possible. Let *all pipes be exposed*, never hidden away in the walls or under the floors, especially under the cellar floor. Never permit a drain, if possible, to lie under the cellar floor. Have as few stationary wash stands as possible. Some of the best houses in the country have rejected them entirely. Don't place too much dependence on traps; use them, but try and make all things so clean there will be no need for them. Traps, disinfectants and filters are too often only delusions and snares to the unwary. Be on a continual guard here.

WATER CLOSETS AND PRIVIES should receive close and repeated attention. *Foul odors are nature's signals of danger.* For farms and small villages the only known *safe*, the only *scientific*, the only *economical* method known of disposing of human excreta is by the use of the *dry earth system*.* By this plan we absolutely avoid all danger of contaminating the water supply; we avoid all bad and disgusting odors, the expense of digging a pit, and the cleansing of the same, besides securing an inoffensive and most valuable fertilizer for the garden and farm. To put into operation this system, all that is needed are galvanized buckets to receive the excreta, and a liberal supply of dry earth to cover the same. Sifted coal ashes answer very well, though it does not absorb moisture as well as earth. The speaker finds that fine garden soil is the best earth for this purpose. The contents of the buckets may be deposited in the barn-yard or directly on the garden.

The old-fashioned privy vault should be absolutely abolished in all farm and village communities. It is one of the worst possible relics of barbarism. It is the most dangerous and deadly thing about our homes. There is death in the solid and liquid contents, which are all the while percolating through the soil and finding their way into the wells and water courses, so that if the present generation is not poisoned in this way, future generations surely will be, and there is death in the nasty, putrid exhalations from the same result, which enters the lungs and poisons us at every breath. *Abolish the thing from every home.* Where old privies exist and are very offensive, they may be

best deodorized by throwing in two or three feet of fresh earth, completely covering the contents, when all odors will be absorbed. The privy should never be under the same roof with the house, and yet it should be reached without undue exposure in inclement weather. One should always be able to reach it dry-shod. It should be so protected that cold blasts do not blow under it and upon the exposed person. This last is an important health consideration. A privy should never be placed *above* a well or cistern, and not nearer than 200 feet. While human excreta is most deadly, we have no positive knowledge that the same is true of the excreta of our domestic animals.

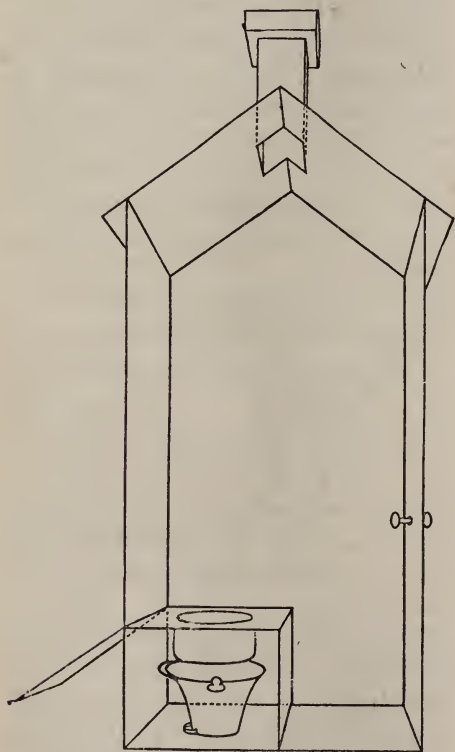


For farms, a very convenient mode of emptying the earth closet consists of a box on a wooden sled, to be slipped under the privy. The box should be lined with zinc and will last a life-time. By placing the privy so that it opens in the rear into a field, it is attended to with the greatest ease. A chain should be permanently attached in front to which to fasten a horse.

A closet adapted to the dry-earth system, pail plan, is applicable to farm privies; a door at the rear permits the removal of the pail; the pail should sit up close to the hole, and one oval in shape, like a coal-scuttle, is best. I have one whole end of my privy partitioned off to a depth of one foot to hold the dry earth. This chamber will hold about a cart load. It has a door

*The system of drying fecal matter by hot air is also believed to be safe and reliable.

near the top, on the outside, to receive the earth, and a small opening near the bottom on the inside from which the earth is taken to throw into the pails. The system works perfectly, and the fertilizer produced, entirely without odor, is worth many dollars yearly. This pail system can certainly be introduced in every village in the land at a great profit.



Water-closets are not recommended for country places, but when people insist on using them they should be carefully constructed, *kept at all times absolutely free from odor*, and always plentifully supplied with water. The water pipes should never be hidden in the walls, under the floors, or under the cellar, but exposed to view and accessible, entirely disconnected from all other pipes, provided with the best traps, with means for ventilation, and

so arranged that no odors from the same may enter the house. The water-closet is best built against the kitchen chimney with a ventilating flue into the same. This will give the best possible ventilation to the closet. The householder must look after this closet himself and *place no trust whatever in any automatic hygienic contrivance.*

GARBAGE AND SLOPS

From the kitchen, when thrown around the yard in a slovenly manner, decompose, and emit gases poisonous to man, and form at the same time breeding beds for poisonous germs. In rainy seasons a large portion of this filth often finds its way into the well or cistern. Kitchen slops and garbage are doubtless often the cause of malaria, diarrhoeas, dysentery and more serious troubles in country and village homes. In towns the garbage should be removed daily if possible, and in all cases before it has time to decompose. The pipes which carry off the slops from the kitchen should be securely trapped that no foul gases enter the house through them. In country places, villages, etc., the slops from the kitchen should be carried at least one hundred feet from the house and the well, in glazed pipes, securely cemented at the joints, and can then be used to fertilize the garden plot or the fruit trees. The solid garbage, as parings, etc., may be thrown into a pit in the garden and kept covered with earth until decomposed, when it may be applied to the soil.

Better than a drain to carry off kitchen slops is a barrel mounted on wheels. This barrel may receive the slops until full, and then be emptied upon the garden or about fruit trees. All kinds of fresh parings are healthy food for the family cow, and most of

the scraps from the table may be fed with profit to chickens. In this way we gather up all the fragments. Nothing is wasted and nothing lies about to decay and poison the family.

DANGER FROM CONTAGIOUS DISEASES.

A large portion of our people are renters of houses, and frequently change their abodes; but how many are careful or thoughtful enough to ask about diseases which have recently been in the house to which they propose to move their families. The point is this: The germs of many diseases, as scarlet fever, measles, diphtheria, typhoid fever, etc., may linger for months about a house, and a family moving into such a place may in a few weeks be stricken down, much suffering, expense, and even death be the result. There is no truth in the old idea that children must have the whole series of children's diseases. The most of them can be avoided, and if more care were exercised by parents, thousands of innocent lives might be saved. If children can be carried beyond the age of sixteen years without contracting scarlet fever or diphtheria, the two most dreaded diseases of childhood, there is then comparatively little danger from them. The same is true of other diseases. The heads of families cannot, therefore, be too careful to inquire into the

REPUTATION OF A HOUSE.

Some houses are notoriously unhealthy. Many are built on made soil, and permeated with foul gases. Many have had contagious diseases in them recently; many houses have damp or wet cellars. All these are to be avoided as pest-houses. In a great many the water supply has long been contaminated, and one cannot drink

the water in safety. About others the soil is saturated with all manner of foulness, and poisonous gases arise in consequence to permeate the house. Some houses are in bad neighborhoods, some near mill-dams or swampy malarious grounds. The writer knows of a number of houses with so bad a reputation that he would not accept them as homes under any circumstances. Funerals are yearly occurrences in them. To all these matters the careful man should give attention. It may be of some interest to him that in some of the States the courts have decided that the owners are responsible for all losses to a tenant, in cases of a house notoriously unhealthy or in which recently there has been a contagious disease, whenever the landlord covers up the facts in the case.

DISINFECTION AND DISINFECTANTS.

The popular belief seems to be that to disinfect is to cover up one bad odor with one more powerful. On the contrary, sanitarians aim to *absolutely destroy all noxious vapors* about our homes, or better still, to prevent their formation.

Fresh air flooding every portion of the house, sunlight in every room, a judicious use of soap and water, and plenty of whitewash in all places where it can be applied, leave the use of drug disinfectants at a minimum.

There may be times, however, in which anyone may need some reliable drug, and for this reason, those now considered most efficient are named. (They should always be purchased of a reliable dealer and should always be of the best quality.)

TO DISINFECT THE SICK CHAMBER.

The room must be vacated. The paper should all be carefully scraped

from the walls. Thorough ventilation for several days, and thorough washing of all surfaces with one of the disinfecting solutions, say, a quarter of a pint of solution of hypochlorite of soda to a gallon of water. The walls and ceiling, if plastered, should be washed with this, and then white-washed. All dust must be carefully washed (not brushed or swept) away from ledges, cracks, corners and crevices.

FOR THE DISINFECTION OF WATER-CLOSETS, URINALS, SINKS AND CESS-POOLS.

Carbolic Acid Solution.—Mix one pint of carbolic acid with two and a half gallons of water, for drains, sinks, etc. Dry chloride of lime may be sprinkled over the contents of a privy. In country places, after the use of the above disinfectants, throw into the privy two or three feet of fresh earth, which will entirely destroy all foul emanations.

THE WASH-HOUSE.

Attached to every well regulated home should be a wash-house. It is often dangerous to send clothing from home to be washed on account of contagious diseases, and washing cannot be done in the house without making it damp and unpleasant. As a health measure, wash-houses should be built.

TREES.

In country places trees add much to the value of a house, but care must be taken that there be not too much shade produced immediately around the house. They may be near the house, not over it. Better have the sunshine over the whole house and to enter every room. An abundance of trees produces moistness and dampness of the air. One tree shading a house is

enough. It has a number of times been observed that a home is healthy while in the sun, but when trees have grown about it, it becomes unhealthy. Trees may be used in the country with great advantage as wind breaks.

A GARDEN.

The healthful home has a garden from which the inmates derive fresh vegetables and in which they secure physical exercise *in the sun*, so beneficial to health. The garden gives a variety of food, needed by all hard workers of brain and muscles. The speaker has seen farmers near large cities purchasing their vegetables of hucksters, who brought into the country the stale refuse of the city markets. He could never bring himself to believe that this was the proper thing for wife and children.

FOODS.

The time here will not permit but bare mention of foods. Let attention be called to the importance of *more variety* and *better preparation*. The speaker most fully believes that "bad food, unwholesome surroundings, unclean habits and foul air are the best friends of alcohol," and the indiscriminate and excessive use of alcohol is the greatest curse of our modern life. A man recently said to the speaker: "If I have plenty of potatoes, pork and cabbage, what more do I need?" He needed variety which he finds in the excessive use of alcohol.

A great work is to be performed by some one who will insist on better preparation of food. Often, it is true, women have small opportunities to do their work well, but in very many cases it is certainly true they have no idea whatever of what healthful appetizing food is. Especially is this

true in the homes of our laboring people.

THE COUNTRY HOME.

There is a point to which we would call attention. Every city or town dweller should aim, as soon as practical, to secure a country home. Where good facilities for railroad travel exist, this can be done at once in a great many cases. The lowness of cost, of taxes, of rents, of car fare, the purity of the air, of the water, the freshness and beauty of the fruits and vegetables, make a home in the country worth more to a city man than almost anything else he can acquire in this world. To most persons, the country home would add much of comfort, and probable additional years to life. Secure the country acre at once, and give to weary wife and faded children that health and strength which is theirs by right. A town may be a proper place for an adult to live in, but the country is the proper place for children to be born in and reared. The country furnishes most of our successful professional and business men. The great men of America have nearly all been country boys. Then give the boys a chance.

A FINAL CONSIDERATION.

One may plan with the greatest care, he may secure all the appliances most approved, he may spend his money without stint to the end that his home may be healthful, but there still is one thing needed, without which all will be in vain. This needed factor is the *eternal vigilance of the housewife; through her earnest and hearty co-operation only will the truly healthful homes be secured.* It is the province of the husband to provide of all things an abundance, but the wife dispenses.

Hers it is too keep up the constant fight with dirt and dampness the prime factors in producing most disease and suffering under which the human family labors. Let every considerate man lessen her arduous labors all in his power, and thus assist in securing a truly HEALTHFUL HOME.

CHEAP AND CONVENIENT EARTH CLOSET.

The description of the following closet is from the pen of Mr. J. C. Bayles, and is taken from the Chicago *Sanitary News*:

"When water-closets cannot be made available, the earth-closet will be found of the greatest convenience and benefit. In addition to the well-known dangers attending the neglected accumulations in privy vaults, few things are more destructive to health and comfort than dependence upon one of these dreadful out-buildings. A visit to one of them involves an amount of exposure in cold weather which even strong men have reason to dread. In the case of women, children and invalids, what can be worse than a plunge out of doors in cold or stormy weather, usually without the precaution of extra clothing or overshoes, for a visit to the foul shrine of Cloacina? The neglect of regular attention to the calls of nature which the dread of this exposure induces, tends to encourage women and children in disregarding them as long as possible, until the evils inevitably attendant upon the habit of constipation, much too prevalent in this country, are induced and confirmed. *The head of a family who makes no better provision than an out-door privy for the needs of his household, neglects the most obvious as well as the most selfish of his sanitary duties.* The accom-

panying sketch requires but brief explanation :

"The body is a plain pine box. Its sides are not over 14 inches high ; its depth is 18 inches (measuring from front to back), and its length about 30 inches. It is divided into two compartments, one 18x18 inches, and the other 18x12 inches. The larger of these compartments has no bottom ; the smaller has a tight bottom. On top are two covers. The lower cover, hinged to the upper edge of the back, extends all the way across both compartments. In this is cut the seat,†



over the center of the larger compartment. The upper cover is hinged to the lower one, and may be raised independently. It is made the size of the larger compartment only, both covers having a little overhang to facilitate lifting them. The material in, and work on such a box will cost anywhere from \$2.00 to \$3.00, according to the amount of finish put on it by the carpenter.

"The receiving vessel is, a galvanized iron coal hod, as large as will stand in the larger compartment with the covers down. The smaller compartment is filled with dry earth, ashes, peat-dust, or whatever else is used as deodorizer, and a little hand-shovel or scoop, is laid in. The closet is then ready for use, which should be preceded by throwing into the coal hod

as much of the dry material as is needed to cover its bottom an inch deep. When used, the upper cover is raised, exposing the seat. After use the lower cover is also raised, uncovering both compartments. A small quantity of the dry material is then taken in the scoop and sprinkled over the contents of the hod. A quart is usually more than sufficient. The operation is repeated whenever the closet is used, until the hod is full, when, of course, it must be emptied. Its contents will turn out as a solid mass, inoffensive to sight and smell. Even the most fastidious person, with strength enough to carry the full hod out of doors would make no objection to emptying it. Occasionally, it is well to air and sun the hod after emptying. No other cleansing is required. It is better not to use an earth-closet as a urinal, but so much of such use as is incidental to its employment as a stool in no respect interferes with its satisfactory workings. Slops should on no account be poured into it.

"The best of materials which can be had without expense or trouble, is the fine siftings of anthracite coal ashes. Ashes from bituminous coal are not adapted to the purpose. Dry loamy earth, or leaf-mold, will answer very well, but it is troublesome to dry and store it. It cannot be had dry enough out of doors, even in mid-summer. *Sand is useless.*

Discreetly and decently used, an earth-closet gives very little trouble. If ashes are thrown in after each use, it will not require any attention until the receiving vessel is full. The object of leaving the larger compartment bottomless, is to facilitate cleaning. More or less ashes will be spilled around the hod, and this should be swept out

† NOTE.—The hole in the seat should be long from front to back, but narrow from side to side, never made circular with a pair of dividers, as a country carpenter will invariably make it unless otherwise instructed. The proper dimensions are 11x4 inches. The edges should be moderately beveled. This shape will make the act of relief much easier and tend greatly to prevent that painful disease hemorrhoids.

NON-IRRITANT IODINE.

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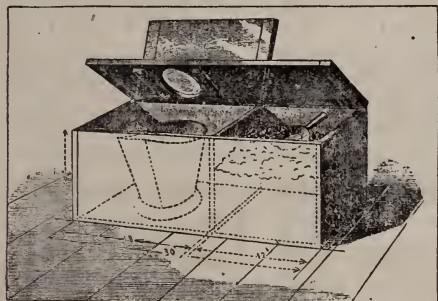
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frequently. By raising one end of the box, the floor under it can be swept much cleaner than the bottom of a box could be without turning it over.

Such an earth-closet can be placed and used anywhere indoors. No doubt it could be made a nuisance, especially if boys were permitted to saturate the wood with urine, if a person using it should forget to use ashes, or if the hod were left to become overfull and matter intended to be held in it should roll off on the floor. It needs attention like every other good thing, but, given as much care as would be bestowed upon any other article of furniture, it meets all the requirements of a safe and convenient indoor commode."



THE HYGIENE OF THE NOSE AND THROAT.

BY DR. CARL SEILER,

Instructor in Laryngology and Lecturer on Disease of the Throat and Nose, at the University of Pennsylvania.

(Continued from page 5)

In many cases of cold, it is not the head only which suffers, but the throat and particularly that part of the throat which is called the pharynx or tonsils are the parts most effected. When this is the case, the fever, especially in children, is very high and accompanied by considerable distress, both in the head and throughout the whole sys-

tem; the tonsils begin to swell, and are painful, so that swallowing is often impossible; the throat feels dry and hot, the voice becomes thick and the saliva runs out of the mouth because the act of swallowing is so difficult that it cannot be disposed of in the usual way. An attack of this sort is apt to continue for some time and finally results in a gathering in the tonsils which must then be opened as soon as possible, to allow the matter to escape and bring about a cure. One attack of this kind is often followed by other attacks at more or less regular intervals throughout the winter season, and this is not only the case with children but also with adults; these frequent attacks of quincy, as it is commonly called, give rise to a hypertrophy called "Enlargement of the Tonsils," so that the throat is almost closed by the enlarged glands. Such a condition of affairs should be seen to and the enlarged glands removed by a competent physician, because, if the child or adult should be attacked by any of the diseases which involve the throat, serious consequences may be the result. There is a popular prejudice against removal of the tonsils which, like many other popular notions in medical matters, is entirely erroneous, for the tonsils do not seem to have any function or use in the system as far as physicians have been able to determine. In fact, in their normal state they are absolutely invisible by inspection of the throat through the mouth. When therefore they project so as to become visible they are abnormal in size and give rise only to annoying symptoms and even distress and it is proper that they should be removed. Frequently these hypertrophied tonsils are the seat of cheesy masses which accumulate within

the crypts, or little pockets which are nothing more than the natural secretion of the gland which has become hardened and thus shows itself as a white bad smelling mass which is exuded from the glands. To prevent such frequent occurrences of quincy, in other words, to break up the habit of periodical inflammation of the tonsil, there is no better means than to harden the skin of the neck, so that drafts of cold air may not produce an inflammation within. This may readily be done in the following manner :—

First. Bathe the neck and throat, morning and night with cold water by squeezing four or five spongefulls of cold water in the nape of the neck and then wiping the skin dry without producing friction.

Second. Never bundle up, or wear comforters, shawls or fur around the neck, but allow the skin of the throat to be exposed to the air in the same manner as the skin of the face is exposed ; this only seems reasonable and is borne out by long experience, for we never hear of any one taking cold from a cold wind or even draft striking the face ; in fact, whenever we want to avoid catching cold we turn the face toward the draft and thus escape the injurious influence which it might exert.

In an acute attack of quincy poultices around the neck to prevent the swelling of the glands from becoming painful, are extremely grateful to the patient ; iced milk and small pieces of ice in the mouth should be used to allay the thirst, and as soon as possible a physician should be called in to attend the case, for home remedies—gar-gles, cough syrups and other nostrums only tend to aggravate the suffering and prolong the attack. Great care

should also be exercised to keep the patient from undue exposure and not allow him to get up out of bed too soon, as the consequence of such negligence is often attended with serious results.

(*To be Continued.*)

HEALTH IN CITIES.—From an address by that veteran Sanitarian, Dr. A. N. Bell, we learn that in Geneva in the year 1589, the population was 13,000 ; and the probabilities of life were to every individual born eight years seven months and twenty-six days. In the seventeenth century the population increased to 17,000, and the probabilities of life to thirteen years three months and sixteen days, and so on continuously, From 1814 to 1833, the population being from 24,158 to 27,117, the probabilities of life for every individual born were forty-five years and twenty-nine days ; and at the present time, (1860), the probabilities of life in Geneva are near fifty years. This result is attributed to the improved condition of all classes ; to the science of public health being better understood and better applied ; to larger, better and cleaner dwellings, more abundant and more wholesome food ; and, in fine, to a better regulated public and private health.

THE EFFECTS OF REGIMEN.—Dr. A. N. Bell tells us that as a special instance of the effects of regimen in the preservation of life, M. Mallet, from whom these statistics are taken, mentions that in an establishment for the care of female orphans taken from the poorest classes out of eighty-six reared in twenty-four years, one only had died. These orphans were taken from the poor.

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EDITORIAL.

TO OUR SUBSCRIBERS.

We believe that this journal has many good friends who are interested in the work in which it is engaged and who would like to see its usefulness extended. Will not such endeavor to procure for us new subscribers. If each of our friends would secure us *only two* names and send them to us with the amount of subscription (\$4.00) it would serve greatly to extend the scope of the journal. It would be an easy matter for each of our present subscribers to get *two* of their friends to subscribe and the aggregate would be the means of greatly disseminating a knowledge of hygiene.

THE STATE BOARD OF HEALTH.

"What is the State Board of Health?" is the question that was recently put to us by a gentleman of even more than ordinary intelligence. "What has the State Board of Health done?" is

another question that has been asked by one of our leading citizens.

These two queries, the replies to which are clearly evident to those giving special attention to the subject, are, doubtless often and repeatedly asked by a large number of our people. The State Board of Health is a body called into existence by the evident knowledge that much of the disease that afflicts humanity is preventable. It is a branch of our State Government to which has been entrusted the great, and almost sacred trust, of preserving the health and happiness and prolonging the lives of our people. It is a body closely belonging to the department of political economy, for just in so far as its mission is fruitful is the wealth of the State increased, for we have high authority for asserting that "Public Health is Public Wealth," and we know, on the other hand, that just as sickness in the individual means loss of wages and consequent poverty, so also does this aggregation of sickness mean poverty to the State. Therefore, might we really and truthfully say that the State Board of Health is a body whose duty it is to guard the health and *increase the wealth* of the State. To those who have reflected upon the subject this Board is unquestionably the most vital body in the State politic, its ultimate effects, if fully realized, superceding many of the most expensive institutions of the State.

The terrible Plymouth epidemic was the straw that broke the opposition to the establishment of a State Board of Health in this Commonwealth, and this epidemic cost, in round numbers, \$100,000, all of which would have been saved had this body been previously in existence. The hospitals that annually ask for and receive large ap-

propriations from the State are necessary and they must be supported so long as disease is a factor in our lives, but we know that by far the larger proportion of cases treated in these hospitals are cases of *preventable* disease, and that if the full possible measure of prevention was realized much of this enormous annual expense could be saved. One of the most expensive demands upon our State resources is from the various insane asylums. Ask any intelligent specialist in this branch, and he will tell you that by far the greatest proportion of cases of insanity are self-inflicted, that they are due to neglect of hygiene and that they are preventable. Our alms-houses are mainly peopled by those who, on account of faulty education and faulty lives are unwilling and unable to labor for their support, and our alms-houses cost those who do labor a great deal of money every year. The most eminent authority warrants us in saying that as a community advances in the knowledge and practice of hygiene, the proportion of its criminal class decreases, so that a portion of the great expense of maintaining prisons and reformatories is thereby saved.

So, we might go on and, enumerating nearly every item of expense, demonstrate how, by the observance of sanitary laws, great sums of money could be annually saved to the State, but let us dismiss this portion of our subject by saying, with the great Beaconsfield, that the first duty of the State is to preserve the health of the people, and look into our second problem.

In the city of Philadelphia we have a Director of Public Safety one of whose principal duties is to guard the homes and rights of the people from encroachment by the unlawful and un-

ruly, and he fulfils this duty with signal ability. But that he may do so, councils has placed at his disposal a sum of money so large that he can employ some 1,500 men to carry out his directions. If councils had only appropriated \$500 a year with which to pay policemen, Director Stokley might have one half grown boy on his force, and he would be able to do something in the way of protecting the people, but we imagine that the results would be satisfactory neither to himself nor the people.

The parallel may seem absurd, yet it is precisely what past legislatures have done with the State Board of Health. They created the Board, ordered that it should preserve the health of the State, of more than 4,000,000 people, and then gave it an appropriation of \$5,000 per year with which to do this work. We ask any of our intelligent readers whether such a position is not an absurdity. We have no fault to find with the legislatures that made this appropriation, because we recognize that legislators are but representatives of the people and we know that heretofore the duties of the State Board of Health and its necessities were so little understood that the people probably would not have supported their representatives in liberal appropriations to this Board. Yet, with this small appropriation, the Board has done some most excellent work. Since the "Plymouth epidemic" there has been no epidemic of any magnitude in this State, yet we have frequently been on the verge of such, and the danger has been averted by this Board. We cannot in the short space of an editorial enumerate the work that this Board has done in the past four years, but in our next issue,

we will publish a concise statement thereof. If then, the Board is a necessity, if it has a right to be and a duty to perform, is it not but common justice that it should be properly endowed. The members of this Board (all save the Secretary) serve without one penny of remuneration, direct or indirect; this is wrong, they should be well paid, so well paid that each member could afford to devote his whole time to the work. But, let this go for the present. What the Board should have and what we hope this intelligent legislature will give it is all the reasonable legislation it asks for. It is only fair that it should. Give it plenty of money and plenty of power and if, when the next legislature convenes, the results do not justify what has been done, let it be revoked. It is not fair, it is not *American-like* to ask this Board to do a great work and to refuse it the necessary means therefor. The Act of the Legislature creating this Board imposes, as one of its duties, that it shall recommend to the legislature, legislation in the interest of the public health. This it has done in the past and its recommendations have been ignored. This is not fair.

If we need a State Board of Health at all, we need one with adequate power and properly endowed, otherwise we might as well have none. We say it with a feeling akin to mortification that there is no State in the whole Union where, in proportion to its population and wealth, the State Board of Health is so poorly endowed as in our own State, and there are very few States, irrespective of size and wealth, where the appropriation is so small. If we want to do as our sister States are doing we should give this Board at least \$25,000 per year, and then we

would see some grand work. Try it; let this year's appropriation be liberal; the people are now awake to the importance of the subject and such legislation will be popular. Try it, and since this Board has done so much with so little, we may feel sure that with adequate means it will be very likely to help keep the State as the Keystone in the latter day arch of sanitary reform; try it.

GETTING AHEAD OF DISEASE. Dr. P. R. Inches, in a recent address before the New Brunswick Medical Society, instanced the city of Edinburgh as showing the benefits resulting from the intelligent use of sanitary and preventive measures. In 1862 the population of that city was 170,000, the deaths 4,661. In 1886 the population was 211,400, but the deaths were only 4,149—a fall of death-rate from 26.65 to 19.62 per 1,000; and the change took place mainly in the diseases most influenced by sanitary precautions—the zymotic class. In 1862 that group accounted for 19.73 per cent. of the total deaths, but in 1886 for 8.34 per cent. only, and this change represents a continuous fall in the percentage. In some of the poorer and over-crowded districts of the city there was a decrease of mortality varying from 3.77 to 20.71 per 1,000. Such diminution of mortality implies an immense saving of life, and is attributed by the authorities to relief from overcrowding, to the opening of new streets and breathing places, better water-supply, new drainage, improved plumbing, and to the system of notification of infectious diseases, and the isolation and removal of the infected, and disinfection of the place.

NOTES AND COMMENTS.

THE OLD OAKEN BUCKET.

(As Revised and Edited by a "Sanitarian.")

With what anguish of mind I remember my
childhood,

Recalled in the light of a knowledge since
gained ;

The malarious farm, the wet, fungus-grown
wild-wood ;

The chills then contracted that since have
remained ;

The scum-covered duck pond, the pig-sty
close by it,

The ditch where the sour-smelling house
drainage fell ;

The damp, shaded dwelling, the foul barn-
yard nigh it—

But worse than all else was that terrible
well ;

And the old oaken bucket, the mould-crusted
bucket,

The moss-covered bucket that hung in the
well.

Just think of it ! *Moss* on the vessel that
lifted

The water I drank in the days called to
mind,

Ere I knew what professors and scientists
gifted

In the water of wells by analysis find.

The rotting wood fibre, the oxide of iron,

The algæ, the frog of unusual size,

The water, impure as the verses of Byron,

Are things I remember with tears in my
eyes.

And to tell the sad truth—though I shudder
to think it—

I considered that water uncommonly clear,
And often at noon, when I went there to
drink it,

I enjoyed it as much as I now enjoy beer.
How ardent I seized it with hands that were
grimy,

And quick to the mud-covered bottom it
fell ;

Then reeking with nitrates and nitrites, and
slimy

With matter organic, it rose from the well.

Oh ! had I but realized, in time to avoid
them,

The dangers that lurked in that pestilent
draught,

I'd have tested for organic germs and
destroyed them

With potassic permanganate ere I had
quaffed ;

Or, perchance, I'd have boiled it, and after-
ward strained it

Through filters of charcoal and gravel
combined ;

Or, after distilling, condensed and regained it,
In potable form, with its filth left behind.

How little I knew of the dread typhoid fever
Which lurked in the water I ventured to
drink ;

But since I've become a devoted believer
In the teachings of science I shudder to
think.

And now, far removed from the scenes I'm
describing,

The story for warning to others I tell,
As memory reverts to my youthful imbibing

And I gag at the thought of that horrible
well,

And the old oaken bucket, the fungus-grown
bucket—

In fact, the slop bucket—that hung in the
well.

J. C. BAYLES.

HOW SHALL WE BURY OUR DEAD ?

The request of the late Dr. H. D. Schmidt that his body, after death, should be placed in the *ground*, and not in a tomb or vault, as is usually done in New Orleans, is worthy of more than passing consideration, says the *New Orleans Medical Journal*. Our custom of vault-burial is almost as old as the city itself, and was doubtless the outgrowth of a desire on the part of the living to consign their dead to a dry and decent resting-place, rather than into a muddy pool, some two and one-half or three feet below the surface of the soil, as must inevitably be the case in the greater number of our cemeteries should inhumation be practised.

We have carefully studied this question, and after numerous personal observations have come to the conclusion that both methods, under existing con-

ditions, are open to serious objection—vault burial, because the tombs may be imperfectly closed and sealed, and foul gases permitted to escape into the outside air; and inhumation, because bodies placed too near the surface in a damp soil may produce a like result during the process of decomposition. Another objection to vault-burial, and one more serious than that already referred to, is the possibility of contaminating the atmosphere on opening tombs which contain the remains of persons who have died of contagious and infectious diseases. This objection has, however, been met by the officers of the Board of Health, and the sextons of the cemeteries have been ordered to disinfect vaults containing human remains with a solution of chloride of lime, six ounces to the gallon. This method we consider to be thorough, and as far as it can be applied, effective; but the necessity which called it forth still remains, namely, the constant reopening of tombs and the temporary exposure of their putrefying and mouldering contents.

No vaults are opened in this city within one year after the last burial without a special permission from the Board of Health, and though we have been present at the opening of many of them it must be confessed that we have never detected at such times anything more than a musty odor. But if it be possible for disease germs to remain in wardrobes, trunks, etc., and about garments put away for months or even years, we do not see what is to prevent them from clinging to the body they have destroyed when moisture and a constant high temperature are the conditions. This idea is based, we believe, upon rational grounds, and the argument that sextons and grave-open-

ers continue at their trade for years without contracting contagious diseases, does not materially weaken the point we would make—a *possible danger*; and this danger after all is to the young adults and children who attend funerals, and from whom it is next to impossible to get any reliable data for statistics. It is to be remembered that our soil is not one dead level everywhere, and the Metairie and Gentilly ridges, half way between the lake and river, form a convenient and notable exception. On these ridges are located some of the finest cemeteries in the country, and in dry weather graves can be dug in several of them to the depth of six feet without coming to water.

Inhumation might be practiced in other cemeteries on lower ground, and nearer the heart of the city, could our people but settle upon some practical form of drainage. If our canals were drained as they should be, a trench four feet deep could be constructed around many of our suburban burying grounds, which would carry off the surface water and lower that of the soil, so as to permit decent and sanitary burial. So we find that this problem, like many other important ones, is mixed up with the general question of city drainage.

Among the many wise sanitary regulations which govern orthodox Jews is the law which directs them to bury their dead in the ground, and so far apart that the bodies there deposited shall not come in contact. The law-giver evidently realized and anticipated the dangers from overcrowding human remains and the advantages of underground decomposition. It has not been found impossible by the Jews to carefully observe the letter of the law even in this city.

The returning of the body to the

earth whence it came is, after all, not a sentimental or a religious, but a natural and a rational custom. If given our choice of the worm or the bacteria, the moist or the dry rot, we believe that we would prefer the former after all. He is greedier, perhaps, but here he is quicker and more thorough. The ground gives back but little that can shock the nerves or injure the health of the living; the vault is a perpetual charnal-house.

In what we have said no allusion has been made to the disposal of the dead by cremation, and designedly so. As medical men we regard it as the cleanest, safest and altogether best method of disposing of the dead that has yet been suggested. But it will be long before cremation ceases to be anything but a luxury; a fad for the eccentric nabobs and wealthy enthusiasts; an epiphenomenon, as it were, of the great sanitary malady—slow decay. It will be taken up by boards of health and applied occasionally in pestilential disease, but the great mass of the people will always prefer their six feet of earth.

HOW TO DRESS AND WALK.—Recently the women of the Physical Culture Club, of Chicago, listened to a “Delsartian” lecture on “How to Dress and Walk,” by a woman who is said to be one of the most accomplished Delsartians in the country, (says the *Journal American Medical Association*, Nov. 19.) Physical culture clubs among women may be undoubtedly productive of much good; and that women should learn how to dress and walk is important; that they do not know how will be universally admitted. The lecturer pointed out that women should abandon the corset, but

the reasons seem to be more “Delsartian” than physiological. As far as she went in her advice in this matter she did not go wrong. The lecturer’s description of the way to walk was, however, both unphysiological and absurd—though Delsartian. The following was the method given, with illustrations by the lecturer:

“If you put your whole weight on the heel instead of the ball of the foot the tendency is to make the back sink, the abdomen protrude, and the chest to draw in. The first thing for persons who wish to walk well and without effort, and who desire good forms and grace of movement, is to learn to step firmly on the ball of the foot. Next they should throw out and lift their chests as high as possible. Nations and individuals who retrograde are marked by retreating chests and shrinking carriage. There is something about developing a full, high condition of the chest that calls into action all the higher feelings of independence and self-respect.”

We ask in all seriousness and with alarm: Is society to be infected with this new “fad,” in comparison with which the “Grecian bend,” now happily relegated to oblivion, was a blessing? Why has nature provided women with heels if these are not to be used in walking? Fashion and the shoe-makers have already done enough in the way of deforming the foot, without the intervention of this new absurdity that tells women to step on the balls of the feet, and thus make walking dolls of themselves. Curious, that mankind, the highest of the animal creation, should be the only living creature that stultifies, deforms and mutilates itself for fashion’s sake! Imagine a procession of women on a crowded street,

each one stepping firmly on the ball of her foot, and then throwing out and lifting the chest ! The heel was made to step on, to bear the whole weight of the body at the beginning of the step ; as the body goes forward the weight is transferred to the ball of the foot, from which the spring for the next step is made. Had the Delsartian lecturer advised her audience to walk on their heels only she could not have committed herself to a greater piece of absurdity than that quoted. Putting the weight on the heel does not make the chest "draw in ;" and if it makes the back sink and the abdomen protrude no one is the worse for it. Physiologists will certainly be astonished to know that stepping on the ball of the foot will develop the chest and awaken feelings of independence and self-respect. We were not hitherto aware that our moral intellectuality was located in the foot, and that if we trod on our heels we become slavish and lose self-respect. It would seem that a lecturer on physical culture should at least know something of primary school anatomy and physiology

back to the freedom and grace of the old Greek ideals, and find in the deep-bosomed Junos and the stately, well-poised Venuses of antiquity, with their loose girdles and flowing lines of drapery, her models in dress. She must be strong and many-sided mentally. All art, all culture, all those mighty principles of physical and psychological law—of which an ancient Greek has said that 'the divinity is mighty within them and groweth not old'—must minister to her intellectual wants, for how shall she give life who knows not the principles of life? Last, and best of all, she must be grand in that freedom and purity of soul which shall make her love a royal boon, a guerdon worthy of all knightly and chivalrous homage to the man who shall call her—wife."

WARM NIGHT GARMENTS.—When the air is cold and the weather inclement, says *Health*, it is the general custom to wear garments of extra thickness and warmth, and to sit around roaring fires. But on going to bed, what takes place? In ninety-nine cases out of a hundred people pass from the warm living-rooms into chilly bedrooms. As if the sudden change from extreme heat—for there can be little doubt that what with fires, gas and insufficient ventilation, people are in the habit of breathing an atmosphere the temperature of which is considerably higher than it should hygienically be—to excessively cold is not sufficiently absurd, they proceed to divest themselves of their several warm garments, to garb themselves in thin linen night-shirts, and to consign their heated bodies to the cooling influence of unsympathetic sheets ! Conventionality has habituated one to the custom ;

THE IDEAL WOMAN OF THE FUTURE.—"The ideal woman of the future," says an eminent physician, "must be a woman of grand and strong physique. Bulwer says 'the match for beauty is a man, not a money chest.' Equally true is it that the match for the ideal man, the coming twentieth century man, is a woman, not a bundle of aches and pains. And woman will not have gone far in her search for health, before she will have discovered that her dress is a fetter self-imposed, which she herself must summon strength to break. She must cast off her slavery to the fashion plate and go

but a really serious contemplation of it can not fail to make the utter absurdity of the custom clearly apparent.

The Chinese, from whom many useful lessons have been learnt by more civilized nations, can give us a wrinkle on this subject. John Chinaman sleeps in the same kind of clothes as he wears in the daytime, the easy and flowing garments to which he is addicted allowing of this without causing inconvenience. Western nations are not favored in the latter respect; but still it would be quite possible to replace the airy night-shirt at present in vogue by some garment which, as regards warmth, was equivalent to the several distinct articles of clothing constituting the working dress worn by day. Dwellers in foreign countries invariably sleep in flannel garments, and the backwoodsman wraps himself in a stout woolen blanket and defies the elements. They are sensible. The human frame should, undoubtedly, be clothed in woolen garments, for wool is a bad conductor of heat. Enveloped in flannel the body maintains a normal temperature, which is of the greatest importance. No sooner does the temperature fall than the action of the various functions becomes impaired; the nerves get out of gear, and the whole system suffers disorganization.

PATTI'S HEALTH.—If any woman ever possessed the secret of eternal youth it is the incomparable Patti, (says a writer in *The Times*.) Perhaps the secret lies in her careful life. Here is the account she gave a visitor at Craig-y-Nos of her daily regimen: "I go to bed early—at half-past ten; I rise early—at half-past eight. A glass of hot water and lemon—correc-

tive for indigestion—I take every morning before my bath?" "What do you take on singing days?" "A light and early dinner at three and little or no supper after the performance." "Do you take wine?" "Very seldom; a liquor glass full of whisky generally and occasionally a glass of champagne?" "You enjoyed excellent health in your South American tour; I suppose you were very careful." "Of course, I ate no fruit and was careful to be in early so as to avoid the night air."

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THE WATER SUPPLY IN JAPAN.—The construction of the new water-works at Yokohama, under the superintendence of General Palmer, R. E., was a formidable undertaking. The intake is about 25½ miles from the filtering beds, and the work was rendered extremely difficult in various places by the rugged and hilly nature of the country, which necessitated the opening of a temporary road, the erection of several bridges and the excavation of cuttings; but, in spite of all obstacles, the undertaking was completed within the specified time. The British Consul at Yokohama, in his report, anticipates that the health of the town will be greatly improved by the introduction of a plentiful supply of wholesome water, and that it will prove instrumental in protecting the community against the ravages of cholera. In consequence of the success which has attended this undertaking, several other towns have applied for a similar water supply, and the subject is now being carefully studied. In Tokio, also, arrangements are about to be made for improving the supply. The city has 1,300,000 inhabitants, and enough water would have to be pro-

vided for 2,000,000. The question is a pressing one for Japanese towns, because the wells are, for the most part, fouled, owing to their proximity to the rice fields.

THE HEALTH OF FEMALE EMPLOYEES.—The Legislature of this State at its last Session ordained that every person, firm, association, individual, partnership or corporation, employing female employés in any manufacturing, mechanical or mercantile establishment in this State, shall provide suitable seats for the use of the female employés so employed, and shall permit the use of them, by them, when they are not necessarily engaged in the active duties for which they are employed.

Any person, firm, association, individual, partnership or corporation, violating any of the provisions of this act, shall, upon conviction thereof, before any magistrate, alderman or justice of the peace, be sentenced to pay a fine of not less than twenty-five nor more than fifty dollars, to be paid into the treasury of the proper county, and costs for each offense, and upon failure to pay the same shall be committed to the proper jail until discharged according to law.

TO PREVENT THE ADULTERATION OF CANDY OR CONFECTIONERY.—The last Legislature of this State ordained that, if any person shall manufacture for sale, or sell or offer to sell any candy or confectionery, adulterated by the mixture of terra alba, barytes, talc, or other mineral substance, or by poisonous colors, or flavors, or other ingredients, deleterious or detrimental to health, knowing the same to be so adulterated, such person so offending

shall be guilty of a misdemeanor, and upon conviction, be sentenced to pay a fine not exceeding one hundred dollars nor less than fifty dollars, and the candy or confectionery, so adulterated, shall be forfeited and destroyed by the order of the court.

If any candy or confectionery, adulterated in violation of this act, shall be found in the possession of any manufacturer, merchant, or dealer, it shall be deemed *prima facie* evidence that the same is offered for sale and that the person having it in possession knew that the same was so adulterated.

No action shall be maintained, or recovery had in any case, for the value of any candy or confectionery which may have been adulterated as specified in this act, and it shall be competent for the defendant in every such case to prove that the candy or confectionery was so adulterated, and proof thereof being so made shall amount to a good and legal defense to the whole of the plaintiff's claim therefor.

HINTS FOR THE TREATMENT OF SLEEPLESSNESS.—The following *resume* of an article by Dr. Eccles, on the treatment of sleeplessness, is published in the current number of *Gaillard's Medical Journal*: 1. *Hot bath*, taken just before settling quietly for the night, is most valuable in producing a dreamless sleep, though this does not usually last more than four hours, and is sometimes followed by a period of great wakefulness, relieved only by a short morning doze. Method of giving the bath most important. Bathroom should be at temperature of 65° F. Patient to be at once stripped, and then the stooped head and face rapidly douched with water at 100° F., to dilate

brain vessels ; next whole body, except head and face, to be immersed in bath at 98° F., and this temperature rapidly raised to 105°-110° F. In about eight to fifteen minutes, when the at first accelerated pulse has fallen to a slow, full, steady, and compressible beat, the patient must be slowly raised, closely wrapped in warm blankets (a loose pyjama suit is a good contrivance), and conducted to the bed-room without any haste and at as small personal effort as possible. On reaching the bed-room he will be dry. Let him then at once don his night-clothes and immediately lie down with the head well raised, a hot bottle to the feet, and the body well covered with bed-clothes. The bath probably acts by reducing the supply of blood to the whole of the brain, thus decreasing the functional activity equally throughout, and so placing it in the most favorable condition for complete functional rest, to the exclusion of the partial activity of certain centres which would induce dreaming. It has proved most useful for the relief of disturbed sleep in persons who have either ceased to be influenced by ordinary hypnotics, or in whose cases their use is contra-indicated. The bath itself, however, is contra-indicated in extreme anæmia, emaciation and heart disease.

THE CONTAGION OF MEASLES.—Dr. Olliver states that it is wrong not to isolate children affected with measles before the eruption appears. The disease is contagious from the moment of onset, which is usually four or five days before the appearance of the eruption, and may be recognized by certain symptoms. If the little patients were isolated as soon as these symptoms are observed the chances of contagion

would be considerably diminished. In all doubtful cases he advises isolation for a few days.

ARE THE MEN DYING OUT?—Professor Stanford E. Chaille has recently called attention to the well-known fact that the average life of woman is longer than that of man, and in most parts of the United States woman's expectation of life is greater. There is no immediate danger, however, of man dying out, for more males are born every year than females, while of late years the disparity between the expectation of life in women and men seems to be decreasing. For example, although Dr. Farr's and the older English insurance tables show figures that favor women, recent American tables (American Experience, thirty companies) are in favor of men in all but sixteen of the years from 10 to 99.

SOTERIOLOGY AND THE STOMACH.—Under the head of "Soteriology," or the science of health, Dr. S. P. Crawford, Health Officer of Stockton, Cal., testifies to the importance of clean, well-cooked food as a preservative of health, even in the foulest air. As an illustration, he says (*Southern Practitioner*): "The Chinese race are a peculiar people, as free from disease as any other people, yet they live in an atmosphere so circumscribed and contaminated, that one unaccustomed to their quarters can scarcely breathe in them. I have often 'run the gauntlet' of their asphyxiated atmosphere while inspecting their quarters as health officer. I account for their immunity from disease in such quarters, by their simplicity of diet, its exceptional cleanliness, and being thoroughly cooked. The meal for the whole family is cooked

together in one pot; meat or meats, potatoes, vegetables, rice, all boiled and stirred together, and when thoroughly cooked, is ladled out in deep bowls and eaten with chop-sticks, which hold but a small quantity at a time, giving ample time for the mess to cool before it reaches the stomach. They drink no water, but use tea, either hot or cold, for drink, without milk or sugar. There is but little chance for microbes to breed between the boiling pot and their stomach."

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 EL PASO; A CITY OF HEALTH.—Recently we had occasion to comment on the extraordinarily low death rate of Pullman, Ill., and our remarks thereon have called forth a statement from Dr. W. M. Yandell, the wide-awake health officer of El Paso, Texas, who tells us that El Paso's death rate for last year was only 8 per 1,000. If we exclude the Mexicans, Chinese and Negroes, we have the astonishingly low death rate for the native white population of only 5.6 per 1,000. It would seem from Dr. Yandell's report that consumption originating among the white residents of El Paso is, practically, unheard of.

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 REMOVE THE CONDITIONS OF DISEASE.—If the conditions are favorable for the plagues of Egypt, India or the Black sea here in America, here they will appear (says Dr. H. J. Herrick). If the conditions are favorable for yellow fever, cholera, or black death, no quarantine can build an enclosure which says, "Hitherto canst thou come and no farther." If the conditions are favorable for malignant small-pox, scarlet fever, diphtheria, measles, there they will appear. Create the conditions in the homes of the inhabitants

of this city for cholera and you will have it here; let the air be deprived of its quantity of oxygen and given an excess of carbonic acid, and further rendered irrespirable by effluvia from a crowd; at the same time let the diet be half rotten, dried or green vegetables and putrefying meat; let the water be filled with foreign matter, effluvia from the dead and putrefying animal or vegetable matter, excreta from the living, or charged with irritating solution from the mineral kingdom, and you have conditions such as, being variously combined, may and will produce malignant types of disease—typhoid, cholera, yellow fever, diphtheria *de novo*—without the introduction of the initial germ, or rather that furnish the essential conditions for the germ, if it be regarded as the immediate cause.

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 INDEX FOR VOLUME III.—Owing to an unavoidable accident, the title page and index for the last volume (volume iii) could not be published in the December issue. It will be furnished with the issue for March.

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 THE CAUSE OF ILL-TEMPER.—The cause of ill-temper has been discovered by a dress-reform lecturer, who does not consider it an evidence of bad disposition. She says that "oftener than not it is owing to bodily discomfort proceeding from improper dressing, and that wives would all be sweet-tempered if they were properly attired and took sufficient exercise." There is probably a good deal of truth in this (says the *Journal Am. Med. Association*.) Improper and uncomfortable dress and indigestible food are sufficient to cause ill-temper; and if ill-temper be given the rein while food is taken indigestion will result sooner or later.

EFFECTS OF CLOSE SHAVING.—Do you know what a close shave means? (says a writer in an exchange.) I never did until I looked at a face the other day, through a microscope, which had been treated to this luxurious process. Why, the entire skin resembled a piece of raw beef. To make the face perfectly smooth requires not only the removal of the hair, but also a portion of the cuticle, and a close shave means the removal of a layer of skin all around. The blood vessels thus exposed are not visible to the eye, but under the microscope each little quivering mouth holding a minute blood drop protests against such cruel treatment. The nerve tips are also uncovered and the pores are left unprotected, which makes the skin tender and unhealthy. This sudden exposure of the inner layer of the skin renders a person liable to have colds, hoarseness and sore throat.

HOW MILLIONAIRES ARE MADE.—“Did you ever notice,” said one recently whose business requires him to be on the street constantly, “that it is chiefly the poor people who drop their money into the boxes or cups by the side of the street corner organ-grinders? The rich and well-to-do never think of giving to them. That is true, but who has the easiest mind, the happiest life and the greatest measure of contentment.

NOVEL CASE OF DROWNING.—It is reported that a man well under the influence of alcoholic liquor recently went into a saloon in Trenton, N. J., and called for a glass of beer, which was given him on a table at which he was seated. He was soon observed to be leaning forward upon the table as if

in a sleep or stupor. “When the bar-keeper tried to arouse him, half an hour later, it was found that he was dead, his nose being immersed in the liquor in such a way that respiration was completely stopped.” Many cases have been reported of persons having been drowned in but little depth of water, but this is the first case reported of a man drowning himself in a glass of beer.

GOING TO SLEEP IN CHURCH.—To fall asleep during Divine service in the house of God is considered by most persons as not only a breach of etiquette, but a proof of great lack of spiritual fervor and want of faith. To snore in church might even give rise to a public scandal. Certainly, the preacher would look upon the drowsiness of his congregation as an obvious reflection on his oratorical powers and on his ability to rivet their attention. Indeed, a story is told of a celebrated, but somewhat eccentric, divine in Scotland becoming so annoyed at the persistent sleepiness of one of his parishioners, seated just under the pulpit, that he lost his temper and threw down upon the offender's head a heavy Bible, with the remark: “If ye will na hear the Word, a'll ma' yer feel it.” And yet the minister nor the people are to blame for this sign of weakness. In many cases the poor sinner is merely succumbing to the first stage of asphyxia, which it is useless for him to try to resist beyond a certain point. When he snores he is becoming narcotized by carbonic acid gas. Our English contemporary, the *Medical Press*, calls attention editorially to the defective ventilation of many churches, especially of those in which several services are held on the same

day, without an opportunity being offered to renew the air. When we consider that every adult human being requires 3,000 cubic feet of air per hour, we need hardly ask the question whether the average congregation usually gets that amount.

And yet it could be easily enough obtained. It is only a matter of a little expense, and that might be provided for by setting aside one or two collections every year for the purpose of forming a Fresh Air Fund.

OVERWORK ON RAILWAYS.—It is stated that the Board of Trade of England have ordered the principal railway companies to supply them with returns showing every occasion during two typical months this year and last on which any man concerned with the working of the traffic was on duty for more than twelve hours continuously. It is believed that the Government contemplate the introduction of a measure dealing with the subject.

SANITARY CONDITION OF PENNSYLVANIA COAL MINES.—A correspondent of the *Chicago Herald* says: One cannot but be struck with the poor condition of these mines, both as to ventilation and roof supports. The first is insufficient, and the last is criminally absent in so many cases that death from a "falling roof" has become alarmingly common. Both ventilation and roof support cost the mine-owners considerable, and, upon the principle that pervades all their mines, expenses are kept at the lowest notch, in order that the profits may reach the highest. As a consequence the mines are little more than half ventilated, and less than half supported by the necessary pillars to prevent the slate

roof from falling upon the unfortunate workmen. Hence it is that the miners' hospital here is nearly always crowded, and the Potter's Field is every day extending its borders.

PHYSIOLOGY IN THE PUBLIC SCHOOLS. The readers of the *Century* will remember the very amusing article that appeared about a year ago from the pen of Samuel J. Clemens (Mark Twain), on the answers of public school children to examination questions in the public schools. Several months ago the *Popular Science Monthly*, in commenting on the abuses, educational and otherwise, of the public schools, declared that it was now demonstrated that the public school system should be abolished. In the August number of the *Popular Science Monthly* was an article by "a teacher" on "Physiology in the Public Schools," containing a large number of answers to examination questions. This article shows that physiology is as badly taught in the English as in American public schools, and that the misinformation in regard to the subject of study is due to too much learning by rote without comprehension of the meaning of the terms employed—and to bad teaching; possibly, also, to the fact that children are set at physiological studies at too early an age. And we must agree with what the *London Architect* says in regard to this matter: "These exercises may be thought amusing, but it should be borne in mind that every word represents more or less pain to some unhappy child in endeavoring to recall ponderous words which were without meaning. Education in sanitary matters is desirable, but, as it is at present conducted in public schools, it must injure children's

minds by habituating them to the use of words which they cannot understand." Certainly, it is a serious blunder to lumber up the mind of a child with words that carry no meaning. The words of the Wise Man may be applicable here: "In all thy getting get *understanding*."

THE PREVENTION OF DISEASE IN TROPICAL AND SUB-TROPICAL CAMPAIGNS. By ANDREW DUNCAN, M. D., B. S. Loudon, F. R. C. S., Surgeon Bengal Army. London: J. & A. Churchill, 1888.

This work would be at all times a valuable one, and it is particularly so at this present time when there is such a tendency to ascribe an increasing circle of diseases to "climate." This tendency is hopeless and harmful, and unworthy of scientific medicine. The value of the work is shown by its having received the Parkes Memorial Prize for 1886.

The work is divided into two parts. In the first part are contained the general principles for the prevention of disease in campaigns in hot climates; in the second are developed the same principles as they concern the several special diseases affecting such campaigns. For the prevention of disease, the selection of men and season, marches, clothing, camps, food, and special prophylaxis are considered under certain definite heads. In the second part each chapter begins with a consideration of the special etiology of the disease that is being treated of. It is on this account, because the author enters fully into the various views of the etiology of the several diseases, that we would call attention of all those interested in sanitary science to this publication. At the same

time let us add that it is one of most special value to surgeons in the army and the navy, and to all interested in the influence of climate in the cause as well as the cure of disease.

W. F. A.

DISINFECTING POWER OF TOBACCO SMOKE.—Mr. V. Tarsinari has been making some experiments with regard to the disinfectant powers of tobacco smoke, (says the *Journal American Medical Association*). Smoke from a cigar or cigarette was drawn over a piece of linen, which had been dipped into fluid containing microbes. When the cigar was finished the linen was at once placed in a tube containing a liquid in which such germs could breed and multiply. The experiment was repeated with a number of different microorganisms, including those of cholera, anthrax and pneumonia, and, of course, check experiments were also made in which smoking was omitted. In every case the effect of smoke was greatly to delay the growth of the organisms, and in a few cases it was entirely prevented. Mr. Tarsinari proposes at an early date to follow up his investigations in the hope of isolating that part of the smoke to which its germicidal property is due, and so to possibly add a new disinfectant to the long list of those we have.

YELLOW FEVER IN FLORIDA.—Dr. J. F. Hartigan, writing to the Surgeon-General on the epidemic at Enterprise, Florida, says:

"Had the town been in good sanitary condition, it is clear that the disease, after its introduction, could not have made such rapid headway. But a tour of inspection through it revealed a criminal violation of ordinary hy-

gienic rules. Over its territory are scattered numerous ponds and marshes, generally without an outlet or an attempt at one. Perhaps the most pernicious of these is just west of the hotel. In it is dug a pit about fourteen feet by ten, lined with boards, which has been a receptacle for the hotel sewage. The intention was to regularly mix this with dried muck and use as a fertilizer, but it had not been properly carried out, and the matter for a long time kept leaking through, as was evident from the surrounding exhalations.

I have found the streets and vacant lots generally overgrown with weeds and decaying vegetation; here and there were scattered heaps of all kinds of garbage; the drains were obstructed and there was no system of disinfection or removal of excreta. Perhaps the worst death-trap that was ever found in a Christian community existed here. In the court-house yard the jail was situated; almost adjoining the latter a privy-house was built over a cesspool 10 feet square and 4 feet deep, with a 6-inch pipe communicating. Not only was this intended for the excrement from the jail, but it was an open place where the passerby entered. On account of the porosity of the soil, the fluids percolated, and there was hardly ever an overflow. Two and a half years ago this pest-hole was established by authority! having been permitted to exist since. Of course it was a subject for early attention. After making a bonfire of the building, and a free disinfection, with a dummy-engine I removed in closed barrels to the suburbs more than 1000 gallons of filth, and filled the opening with dry sand. The evil consequences of the condition described

were noticeable as far back as June, and in September, when the county-seat and jail were removed to DeLand. A prisoner named Riley, who was confined only two months, was a strong, robust man when committed, and on transferring him he was but a shadow of his former self. Another man, after five months' incarceration, was turned loose, and has since been a physical wreck. The pale, wan features and languor of the jailor's family attested plainly the havoc made among them. The reason given for the nuisance not being abated was because it was in the court-house grounds, and was county property. The town authorities and health board frequently protested against it, but the commissioners postponed action from time to time. It is but one illustration of the feebleness of county boards of health in Florida. They are mixed boards, and are all appointed by the Governor, generally on the longest list of recommendations." —*Weekly Abstracts of Sanitary Reports*, Dec. 21, 1888.

THE INCREASE OF CANCER IN GREAT BRITAIN.—At the Royal College of Surgeons, Sir Spencer Wells recently stated that cancerous diseases were increasing in this country. The increase was continuous in the seven years after the last decennial period, both in males and females, but considerably greater in males. Deaths from cancer had gradually, from 1861, increased from 360 per 1,000,000 to 606 in England alone, and in Ireland the increase had been from 350 in 1877 to 430 in 1887. Sir Spencer urged the necessity for early operation, and the danger of inadequate, unnecessary or desperate operations, and compared the results obtained by so-called remedies

of a secret character with the work of the surgeon.

LIFE-SAVING WORK OF SANITARY REFORM.—The statistics on this point are inexhaustible, says Dr. Simon P. Wise, and it can be confidently asserted that in a district where the death-rate is 24 per 1,000, efficient sanitary administration will reduce the mortality one-half. Estimated on this basis, there are 360,000 deaths annually in these United States from preventable causes, and as there are fourteen cases of sickness to each death, and every death represents twenty weeks of illness, who can estimate the immense financial loss incurred, to say nothing of the suffering and distress which such an amount of sickness represents? [5 million sicknesses and 50 million sick days in a year, all clearly preventable by sanitary reform!] When we take these facts into consideration, it is indeed difficult to understand why the health bureau of a commonwealth should not be amply supported as the most important department in the State service.

A SIMPLE METHOD FOR THE DETECTION OF LEAD IN WATER.—The minutest quantities of lead in potable waters may be detected by a simple method. The apparatus needed is an ordinary tumbler and two perfectly bright and clean knitting-needles. Fill the glass nearly full of the water to be tested and add eight or ten drops of acetic acid, or, in its absence, a teaspoonful of vinegar. If the water be quite turbid, double or even treble this quantity may be used. The needles should be carefully revolved occasionally. If lead be present in the minutest quantity, in the course of a

short time dark or black spots will appear upon the needles, and in the course of six or eight hours the entire surface in contact with the water will be covered with a gray coating, the depth of color of which will depend upon the amount of lead in the fluid. From time to time a needle should be withdrawn and examined with a magnifying-glass, if necessary, to determine whether or not a deposit is being formed. The same needle should be withdrawn each time, and one needle should be left in contact with the fluid three or four hours longer than the other. After removal they should be placed in a dust-free box and left for twenty-four hours, as in cases where the amount of lead is exceedingly small a deposit may be formed which cannot be immediately detected, but which after standing for twenty-four hours becomes very perceptible, the color being a yellow or reddish-yellow.
—*National Druggist.*

FOOD ADULTERATION IN MINNESOTA.—The report of Dr. Drew, of Minneapolis, Chemist to the State Dairy Commission, just made public, shows that the adulteration of food in Minnesota has assumed alarming proportions. In his report Dr. Drew says that no evidence of adulteration was discovered in the samples of flour and bread examined. In baker's chemicals nearly all were adulterated. Of 29 samples of cream of tartar examined 17 were adulterated, and bicarbonate of soda was only half pure. In the baking powders commonly used, ingredients were found which were likely to lead to the impairment of health. The alum powders are declared to be cheaply made and contain large proportions of flour or

starch. Twenty samples of teas were examined and three found to be adulterated. Only 3 out of 7 samples of ground coffee were found pure. Of 81 samples of spices 64 were adulterated and 17 were pure. Out of 34 samples of "pure cider vinegar" 9 were found pure and 2 adulterated with water. Twenty-three vinegars, not cider, were found to be adulterated with water. Of 10 samples of cider all proved to be apple cider adulterated with glucose syrup, citric or tartaric acid, or of a wholly fictitious character. All but one contained acids prejudicial to health. Adulterations were found in sugars, confectionery syrups, lard, honey, and in almost every article examined.

POISONING FROM FALSE-TEETH PLATES.—A case of supposed poisoning from denture plates is reported from New Haven. The sufferer recently bought a set of false teeth with a rubber plate. He had worn them but a short time when his tongue began to swell. This continued until it was much beyond the natural size. His eyelids also swelled up so that he was blind for a time, and other parts of the body have been similarly affected.

GAME FOR INVALIDS.—After being properly prepared, boil a fine young bird until it is three parts cooked; then remove the skin, pick all the flesh from the bones, and pound it in a mortar, with a little of the liquid in which it was boiled, three tablespoonfuls of finely sifted bread crumbs, a teaspoonful of grated lemon rind, a sufficient seasoning of salt, and a grating of nutmeg. When pounded to a perfectly smooth paste, put the mixture into a saucepan with a little more

of the liquid, and let it simmer gently for ten minutes. When finished, the panada should be slightly thicker than good cream. It will keep quite fresh and sweet for three or four days, and can be heated, a few spoonfuls at a time, and served poured over a slice of nice, crisp, hot toast, or in a very tiny dish with sippets of hot toast inserted round about. Nothing more quickly destroys the capricious appetite of an invalid than having a large dish of anything, no matter how dainty, set before them; they require to eat often but only a very little at a time.—*St. James Gazette*.

RAILWAY TRANSPORTATION AND INFECTIOUS DISEASES.—The National Association of Railroad Baggage Agents have recently met to prepare rules and regulations regarding the transportation of corpses. They have sent to all State boards of health copies of a system of rules prepared by a special committee, with a request that the boards suggest such changes as they see fit. The Iowa board recommended that scarlet fever, typhoid fever, and puerperal fever be added to the list of diseases which render corpses non-transportable; that uniform regulations be adopted regarding disinterments; and that undertakers be compelled to undergo an examination as to their qualifications, and receive a certificate entitling them to engage in business.—*Boston Med. and Surg. Journal*.

THE HOG AHEAD.—It is stated that the United States Government has paid more money in the investigation of the disease of hogs than it has for all the diseases affecting the human race.

YELLOW FEVER IN CUBA.—A Washington physician who is well informed upon West Indian affairs, makes the surprising statement that the native Cubans do not desire to stamp out yellow fever. They suffer but little from it themselves, and are glad to have it kill about 1,000 Spanish soldiers every year. If this is true it is a shocking example of the possible results of race and national prejudice, (says the *Journal American Medical Association*. Cuba is the fever's winter home, and from there every summer it begins a raid upon our Southern cities. It may yet become necessary to annex the island to the United States in order to have it put under proper sanitary condition. As this does not appear to be practicable at present, the best course now open is to take precautions for keeping the infection out of our country next year. Early in the season a rigid quarantine should be established, and the authorities of all Southern cities liable to visitation should see to it that all filth is removed from the streets before it can harbor and propagate the dreaded disease.

THE ORIGIN OF THE YELLOW-FEVER EPIDEMIC.—Cuban smugglers are now being blamed for the introduction of yellow fever into Florida. The Sanitary Inspector of the United States Marine Hospital Service at Havana, Dr. D. M. Burgess, has made a report to Surgeon-General Hamilton regarding the matter, in which he demonstrates at least the extreme probability of these illicit purveyors of rum, cigars, etc., bringing disease-germs into the State. There are about fifty vessels, ostensibly fishing-boats, which are engaged in the business, and making little secret of it. They are not only

dirty and fit vehicles for contagion, but their surroundings while in port are of the sort most likely to communicate any germs there may be in the sewage of the city to them. Dr. Burgess states, in conclusion, that open, well-regulated commerce in clean ships, observing all the methods of modern sanitation, and carrying only acclimated people, is perfectly safe in comparison to this smuggling trade.

SMALL-POX IN FRANCE AND ENGLAND.—In the last annual report of the "Bureau de l'Higiène Publique" a comparison is made, in regard to the mortality from small-pox, between France and England, much to the disparagement of the former. In the larger cities of France the number of deaths from small-pox, during the year 1887, was 1,956, or 0.31 per thousand of the living population. In the larger cities of England, during the same period, the number of deaths was 332, or 0.04 per thousand of the living population. Thus the fatality from small-pox was nearly eight times greater in France than in England. Vaccination is compulsory in England.

DIRTY MATTRESS FILLING.—At the meeting of the Provincial Board of Health of Ontario on Nov. 9th, a letter from a doctor in Guelph was read, enclosing a sample of the wool batting found in a mattress direct from the manufacturer's hands. It was a collection of the dirty odds and ends about the floor of a woollen factory, including the sweepings. It had an offensive smell and was stated to have a most pernicious effect on the health of the unfortunate people who have to sleep on such beds. The letter concluded by urging upon the Board of

Health the necessity of pressing on the Government to have an inspector appointed wherever such manufactures exist, with power to prevent such "abominable outrages upon the health of the unsuspecting public."

BLOOD POISONING FROM FOUL TEETH.—Goodman believes, (says *Gaillard's Medical Journal*,) that blood-poisoning may occur from foul teeth. He relates a case in which a patient suffered with persistent headache, irregular chills, bad breath, and fever which resisted treatment. The man's teeth were so encrusted with tartar that the doctor sent him to a dentist to have them put in order. He returned, showing a set of teeth whose beauty would not have been deemed possible previously, and without further medication the man was cured.

HABITUAL INSOMNIA.—Those who are engaged in hazardous and speculative pursuits, and who get into the habit of irregular business life, and particularly into the habit of laying out plans and devises which shall be "sure to win," are almost always checked, comparatively early in their careers, by disturbances commencing in the circulation. Their earliest symptoms are commonly those of mental strain and irregular action of the heart, followed by results leading to habitual sleeplessness, insomnia generated by habit.

In persons of vigorous constitution the habit of disregarding proper sleep, and the insomnia which springs from it, may go on for several years without any apparent bad effect. In time, however, it is certain to produce its natural consequences. The first indications of danger are irritability of

mind and feverish excitement, followed by depression, pallor and deficiency of appetite. These are succeeded by fits of unconsciousness, in which the affected person positively sleeps, and, it may be, sleeps soundly, without himself knowing the fact. In this way he gets rest, which for a little while may give certain measure of relief; but soon the nervous failure increases, and one of two results succeeds: He either falls into a sleep which becomes a coma terminating in death, or he continues sleepless, unless artificially made to sleep by narcotics, and with progressing failure of power sinks into paralysis, to succumb to that affection.

In exceptional cases the insomniac makes a fair recovery. Under regulative mode of life, and especially under the regulation which leads the sufferer to go to bed at unusually early hours, such as 8 or 9 o'clock, whether he can sleep or not at first, habitual insomnia or sleeplessness may be cured without any artificial aid. It is, however, apt to return after mental strain or worry, and indeed may be expected always to return if the strain or worry be severe or prolonged.—*Asclepiad*.

CONSUMPTION FROM HOUSE SWEEPINGS.—Carnet has experimented with the dust obtained from the walls and floors of various dwellings in which tuberculous patients had been; inoculating guinea pigs with it and carefully excluding all possibility of infection from outside sources. In this way twenty-one rooms of seven Berlin hospitals were examined, and bacilli found to have been present in the dust from most of them. Positive results were also obtained with the dust from insane asylums and penitentiaries.

The dwellings of fifty-three tuber-

cular patients were investigated in the same way, and the dust in the neighborhood of twenty patients found to be virulent. It was the case with absolute regularity that the dust was always virulent when the patient had been in the habit of spitting on the floor or in a handkerchief, while it was never so when a spit cup had been employed.—*Tennessee Health Bulletin*.

ARTIFICIAL FECUNDATION.—Since the Abbé Spallanzini, in 1767, fecundated bitches, and Hunter, later on (1799), succeeded in rendering a man with hypospadias a happy father, the operation of artificial fecundation has passed through many different experiences, which has brought it more than once before the tribunal of both public opinion and the laws of countries. Eight years ago a married couple in Bordeaux, despairing of having a family, consulted a doctor Lejatre, who, by circulars spread about the country, pretended to render sterile marriages fruitful by a special operation. The doctor performed the operation, but no such result followed, and his clients refused to pay him the fee demanded, £60. He thereupon summoned them before the magistrate, but this worthy representative of the law, after listening to the explanations of the doctor—which, by the way, were very minute, all the details of the operation being entered into—not only dismissed the case, but fined the plaintiff for revealing professional secrets. Further, the magistrate gave it as his opinion that artificial fecundation was repugnant to the laws of nature and a positive social danger, and that such procedures should not be put into practice. This verdict was taken up by the Society of Legal Medicine, as it

is called in France, and the President, (M. Brouardel) said that the operation might be performed where, after other means had failed, no reasons were found in the man or the woman to account for sterility. Encouraged by this declaration, M. Lajatre came up to Paris, where he advertised in the daily papers his method of procuring families. It will be remembered that the Paris Faculty refused to accept a thesis on this subject presented by a student called Cérard. Last year a sort of company was got up in the capital, sending, broadcast, pamphlets entitled *Do Vitam*. A large apartment was hired in the Chaussée d'Antin, a doctor was engaged to do the operation, and for a time all went on well. Disappointed husbands and wives came in numbers, but some disagreement took place between the parties interested, and the whole matter has now been placed in the hands of the lawyers, from which it is not likely ever to come out.—*Medical Press and Circular*.

PURE CONFECTIONERY.—The following circular signed by fifteen confectioners of New York City, five of Cincinnati, five of Philadelphia, four of Boston, four of Chicago, two of St. Louis, and ten of other cities, has been issued. It is self-explanatory, and argues well for the public spirit of the manufacturers belonging to the Association :

The National Confectioners' Association of the United States. Its Objects and its Members.—The National Confectioners' Association was organized at Chicago, Ill., on April 23, 1884. The principal object of this Association is to raise the standard of confectionery, and exclude, so far as possible adulterated goods. This work has

been very successful. Since the first meeting in 1884, through the efforts and backing of the Association, stringent laws have been passed in the States of New York, Massachusetts, Ohio, Tennessee, Michigan and Pennsylvania.

The Association, at its Third Annual Meeting, held at the Burnett House, Cincinnati, May 12, 1886, indorsed the following resolution :

"This Association hereby offers a reward of one hundred dollars for evidence that will enable them to convict any person of adulterating confectionery with poisonous or injurious substances—the Association assuming the cost and responsibility of prosecuting the offender."

Notwithstanding this reward and the vigilance of the committee, not a single case of injurious adulteration has been presented, which is strong proof of the almost complete extinction of mineral adulteration. Nevertheless, we desire the coöperation of the boards of health throughout the country, and earnestly request that any case of supposed adulteration that may come under their notice be reported to the Secretary, Martin Dawson, Chicago, Ill.

The Association feels well pleased with the result of their labors during the past five years, and are confident that their future work will redound to the benefit of the public and all legitimate manufacturers of confectionery.

We are also satisfied that no class of manufactured goods offered for public consumption are so entirely free from adulteration as confectionery.

DEATH RATES AMONG SOLDIERS.—A quarter of a century ago the death rate in the Guards was 20 per 1,000; (says Edwin Chadwick), it is now $6\frac{1}{2}$ per 1,000, due to applied sanitary science, and, as I could show, it is not much too high. But Germany beats us with her death rate of 5 to 6 per 1,000. The old Indian army death rate was 69 per 1,000; from 1879 to

1884 the death rate was reduced to 20 per 1,000, and now it is about 14 per 1,000. In the six years from 1879 to 1884 the aggregate saving was 16,910 lives.

STATE BOARDS OF HEALTH.—Massachusetts appointed the first health board in 1879. Its first annual appropriation was \$7,500, while it is now \$60,000. The State of New York appropriates \$20,000 annually to her Board. Illinois appropriates \$12,000 annually, and places a contingent fund of \$40,000 at the disposal of the Board in case of great emergency. New Jersey appropriates \$8,500, with an additional \$1,000 for food analysis, and Pennsylvania gives her Board \$5,000.

IS THE RACE DEGENERATING?—An English lay journal has been making a collective investigation regarding the questions given below: "1. Does your experience suggest to you that the race of Englishmen is degenerating physically? 2. Do you think that the great advance in the healing art is responsible for keeping alive much weak life that will in time affect the whole race injuriously? 3. Do you think that the increased indulgence in physical sports has, on the whole, a good influence on health? 4. Has it ever struck you that probably the great attention paid to health in these days may be producing an anxiety about bodily ailments which is a disease in itself?" Answers have been received from a long array of practitioners, among whom are the names of eminent London physicians. The general view taken is that Englishmen are not degenerating, but that, on the whole, the race is improving in vigor.

TYPHOID FEVER is never absent from New Orleans, says Dr. J. Kaine, and with no other change in conditions except the enforcement of sanitary regulations, the death rate from that disease has been reduced from 68 per 100,000 of population to 16, in less than twenty years. In Philadelphia, where the water is contaminated with sewage, the death rate from the same disease has increased from 56 to 66 per 100,000 in the same period. In Michigan the saving of lives from scarlet fever in the last eleven years amounted to 3,718; and in 1886 appropriate sanitary measures saved the lives of 298 persons, who, under the usual conditions, would have died of diphtheria in a few localities. In Nashville the death rate has been reduced in fourteen years from 34.55 per 1,000, to 16.36 per 1,000. In Memphis the death rate has been reduced in six years from 35 per 1,000 to 23.8 per 1,000. In Chicago the death rate has been reduced in the last five years from 26 per 1,000 to 16.56, a saving of nearly twenty thousand lives. In Massachusetts sanitary regulations has reduced the death rate from infectious diseases in ten years from 28.6 per 100,000 to 18.5.

HYGIENIC REFORM IN FRANCE.—

According to the *Journal d'Hygiene*, the following projects are contemplated in the scheme for reorganizing public hygiene in France:

Obligatory vaccination.

Medical inspection of schools, organized obligatorily.

Physicians will be obliged, under prescribed penalty, to make known the causes of death, and to report to the authorities cases of contagious and transmissible disease.

Sanitary expenses obligatory upon the departments and the communes.

The right given to the authorities to cause to be executed, at the expense of the individual or of communities, hygienic works recognized as indispensable to the public health by the new inspectors of hygiene.

Previous approbation of competent hygienic authorities to be secured for the construction or alteration of dwellings. The architect is to be held responsible for the execution of the measures prescribed.

Responsibility of the heads of public or private establishments, of masters of hotels, proprietors of furnished houses, etc., in case of failure to report to the Bureau of Hygiene on the appearance of zymotic disease.

HYGIENE FOR ROMAN CATHOLICS.—

With all respect, we would suggest to the authorities of the Roman Catholic Church that some better provision be made for the accommodation of those receiving Holy Communion, particularly in country churches. It is not uncommon for healthy country folks, who are accustomed to eat a hearty breakfast at an early hour, to drive, fasting, three or four miles to the church, go to confession before Mass, and after the services are over drive home, not having tasted food or drink until, maybe, twelve o'clock, six hours after the usual time. While this fact will make no difference to many, there are yet some whose health will be injuriously affected by it, and we would strongly urge that in communities where such a condition now exists, the authorities devise some means whereby this period of enforced fasting can be reduced to the minimum.

A HYGIENIC CITY.—The North Carolina *Medical Journal* calls attention to the unusually low death-rate of Wilmington, N. C., during the past few months; the salubrity of this thriving city being due to the precautions taken to prevent an invasion by yellow fever. The streets have been cleaner than for years, back lots emptied of unwholesome accumulations, and alleys put in good order; while the odor of foul privies no longer poisons the night air. A clean town brings health and prosperity, at a slight expense to the public treasury. The *Journal* adds: "The public will, we feel sure, learn that a confiding and helpful assistance to the efforts of the health authorities is always to be met by the best efforts of these officials to prevent disaster, often too dire to be cured, if a disease be allowed to find an abiding place in the community."

True words, wisely spoken, (says the *Med. Times*,) and applicable in many a city besides Wilmington. People are too apt to leave the whole burden of the responsibility upon the authorities, without reflecting how powerless the latter are unless they have the earnest support and co-operation of the community.

BEEF, MILK AND PHTHISIS.—There can be no doubt that bovine and human tuberculosis are essentially the same disease, and that bovine tuberculosis may be transmitted to man by means of infected milk and meat. The necessity of prophylactic measures with this point in view has been urged by THE RECORD for many years, and we are glad to see that the public press and legislatures have at last begun to recognize the fact. It is not probable, however, that the cow is the source of

phthisical contagion in a large proportion of cases. The (pulmonary) phthisical age is from fifteen to thirty, after which milk ceases to be an important article of diet. Further investigation, however, on this point is needed.

COVER DEFORMITIES.—When we recently looked at a man whose face was terribly deformed as the result of a burn, the ear gone, part of the nose gone, and the skin all scarred (and it was in church, where there were lots of ladies), the thought came to us that such a spectacle might have very serious results, particularly if any of the women present happened to be pregnant. And then it occurred to us that while we cannot compel it, yet we would suggest that all who are in any way deformed should cover their deformities out of consideration for others.

CARE OF THE EYES.—The Sanitary Inspector tells us that a recent author of a popular work on Eyes and Spectacles, after speaking of certain causes of eye disease among the poorer classes of children, refers to certain injurious influences to which he has noticed that the eyes of children of well-to-do parents are often exposed. "The little one is left many hours in the care of the nursery maid, and she wheels it in its carriage, so lying on its back that the sun shines full in its face and eyes, or she leaves it thus while she chatters for half an hour with other nursery maids. Many mothers are in the habit of burning a lamp all night, with no protection of the infant's eyes from the full glare of the light. Other parents so place the bed of their children that the foot is directed towards a

window, so that the little ones may be awakened by the sun, and be ready for school. This is a sure way of bringing on weakness of the eyes.

TO INVESTIGATE DISEASES OF SWINE.

—The Commissioner of Agriculture has appointed a commission, consisting of Professor William H. Welch, of Johns Hopkins University, Dr. E. O. Shakespeare, of Philadelphia, and Professor T. J. Burrill, of the University of Illinois, to investigate the subject of swine diseases in the United States and the methods of their treatment and prevention.

DANGEROUS DYES.—A foreign telegram says that Herr Bronin, President of the Ministry of Gotha, is dying from blood-poisoning caused by dye-stuff in his hunting stockings.

TO CALCULATE THE CAPACITY OF CISTERNS.—A correspondent of the *Scientific American* gives the following rule for calculating the capacity of a cistern:

Rule.—Square the diameter of cylinder in inches, and multiply by 0.0408 = gallons per foot.

REJECT BLUISH-WHITE SUGAR.

—The *National Bottler's Gazette* says that when ultramarine, which is so much used in sugar as a bleaching agent, comes in contact with an acid it generates and evolves sulphuretted hydrogen gas, identical with the effluvia thrown off by antique hen fruit.

Test for Ultramarine.—The addition of a small quantity of tartaric acid solution to your syrup will reveal this odor at once, and both it and the sugar should be set aside as unfit to enter a beverage.

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TIME OF MEETING,

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*State Superintendent of Registration of
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BENJAMIN LEE, M. D.

THE ANNALS OF HYGIENE.

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COMMUNICATIONS.

HYGIENE AS A FACTOR IN THE SUCCESS OF JOHN WANAMAKER.

John Wanamaker, was, years ago, regarded by the late A. T. Stewart, of New York, as the greatest merchant in this country; to-day he is as the giant to the pigmy when compared with what he was ten years ago,

hence it seems but fair to infer that he is the greatest merchant the world has ever seen. In addition to this he is largely interested in the Philadelphia and Reading Rail Road, has enormous landed interests and now looms up most prominently as a great political leader. Truly, therefore, is John Wanamaker one of the most remarkable men of the world, and since this greatness is entirely his own achievement it will not be uninteresting nor

unimportant to inquire what part hygiene has played in making him what he is.

In the first place, John Wanamaker is a thoroughly healthy man, so much so that he has been enabled to insure his life for \$1,000,000, the largest amount carried by any individual in this country. His health being so perfect he has given but little thought (knowingly) to its preservation, though with that instinctive wisdom, as it were, which seems to guide all his actions, he in reality does do that which serves to conserve his health. To illustrate; when we were seeking the information for this article, we were told that "*he felt tired and was going to Atlantic City*;" what was this tired feeling but nature's whistle for "down-brakes" and this wise man was instinctively ready to heed the warning. Mr. Wanamaker thoroughly believes that "all work and no play makes Jack a dull boy;" but when he works, he *works*, and when he plays, he *plays*. Living this winter at his magnificent country seat near Jenkintown, some ten miles from Philadelphia, he starts for the city every morning a few minutes after seven o'clock, and by a quarter before eight he may be found ready for business at his wholesale store. His day is a busy one, but when he leaves his office, all thought of business is left behind him, and at home he is as ready to romp and play as any child.

The life of John Wanamaker is in an eminent sense a *natural life*, and herein we believe, is to be found one of the greatest secrets of his phenomenal success. He is, in no sense, ascetic; he is nothing of a crank, he has no theories or notions in reference to life, but he seems to so thoroughly

understand, instinctively, the natural way of living that such life comes natural to him and requires no effort or self-denial. All the artificial phases of life seem naturally repugnant to him; for instance, he recently remarked that he had never seen a "ball" in his life. Tramps over the country are his delight, and in these walks he is usually accompanied by a number of dogs, for which animal he has a great fondness because of its intelligence.

An intimate friend tells us that when visiting at Mr. Wanamaker's country home, when he comes down in the morning he will see his host appearing in the distance, his arms laden with flowers, to be laid by the plate of each guest at the breakfast table, this wise man having been communing with nature for an hour or more and laying up a stock of good health to meet the demands of his marvellously busy day.

To clubs he is a stranger; no high living for him. His unerring instinct tells him that the life which tends towards gout and derangement of the liver, tends also towards derangement of the mental faculties, and that such a life would soon cause to crumble and fall that mammoth business structure that has been the outgrowth of his *natural* mind. We can think of no man whose life more aptly illustrates the aspect of hygiene that we are endeavoring to inculcate. We would not have it understood that a hygienic life means anything more than a *natural* life, and we cannot imagine how any one could lead a more natural life than does John Wanamaker. He denies himself no natural, rational pleasure, on the contrary, his great wealth enables him to enjoy them to the utmost, but, just as he does so naturally enjoy himself, he seems to

have no leaning towards the *so-called* artificial pleasures of life, the amusements designed by an artificial civilization to satisfy, or rather attempt to satisfy, the morbid cravings of an artificial populace.

Mr. Wanamaker seems thoroughly to realize the true import of the saying that "God made the Country and Man made the City," for when he deals with men he meets them in the very heart of artificial centralization, but when he has done with men and their dealings he hurries away to the country to find there the amusements and recreations most congenial to him. It has been said that Mr. Wanamaker is what he is because he is endowed with exceptional faculties. This view being expressed by one very close to him, we asked—"but let us grant that he is a man with very exceptional faculties, do you believe that if he had led a less natural life, if he had been given to conviviality, as it is called; if he had neglected to take the care of his gifts that he has, do you believe that he would have achieved the wonderful success that is his?" "No," was the reply, "I do not."

So that while we must admit that nature has done much for this remarkable man, we must perforce, believe that the greatest gift with which she has blessed him has been the instinctive comprehension of her laws and the delight in their observance which has played such an important role in his life.

It will be seen that we cannot deduce a rule of life, regulating our every action, from the life of this great merchant; and we are glad of it. We are not of that class of Sanitarians who would make the observance of hygiene

irksome by asking that we live by rule. What we believe, at the expense of repetition, is that we should live *natural* lives and that the nearer we do so the better health will we enjoy, the longer will we live, and what is of the most practical interest to the mass of mankind, the greater will be our measure of material success in the world.

Since example is the best teacher, we have felt that by making public the method of life of one whose success in life has been so unusual we might arouse more wide-spread interest in *natural* living. We have only to add that what has been here said about Mr. Wanamaker has been learned from the most reliable authority.

THE RELATION OF SOCIAL LIFE TO SURGICAL DISEASE.*

BY D. HAYES AGNEW, M. D.,
OF PHILADELPHIA.

As the generations fare on, enriched by the results of scientific labor, which pours its tides of opulence into all departments of human thought and industry, there follow through a reactive or reflex influence, certain notable changes, not only on the life and manners of a people, but on their physical and mental diseases. The more advanced a civilization the more complex become the problems which surround it.

While the accumulation of wealth and the multiplication of appliances for human comfort have in the aggregate contributed to the well-being of the race, yet there is reason to fear, that the insatiate and ambitious demands of the masterful leaders in the work of the world, unless conditioned

*Abstract from the *Jour. Am. Med. Ass.*

and environed by reasonable safeguards, may acquire their triumphs at the expense of human life. It is a suggestive and solemn thought, that in the victorious march of civilization, thousands of victims must perish beneath her chariot wheels. There really seems to be a perpetual antagonism between man's inventions and discoveries, and the well-being of a no inconsiderable fraction of humanity. He reduces the elastic vapor of water to practical use, and is rewarded by seeing countless numbers of human beings blown into shapeless masses by his rebellious servant. His chemistry creates formidable explosives, capable of dislodging the solid strata of the earth, and yet, in wicked hands, become instruments for consummating such diabolical plots as serve to unsettle the peace of a nation. He rears manufacturing factories for fashioning multitudinous fabrics which minister to the comfort and luxury of the race, and yet while the hands of the fabricator are busy manipulating the materials of these industries, he is breathing a death laden air. We send our missionaries to China and the Sandwich Islands to reclaim their people from the barbarities of heathenism, and then our commerce to ruin their souls and wreck their bodies. There seems, indeed, to be an eternal conflict between good and evil.

Considerations like these naturally lead to a very inviting field of study, namely, the relation between the material prosperity of a people and the forms of their disease. What I propose, is very briefly to follow one line of this inquiry, that is, the relation of social life to surgical disease. There is no tyranny more exacting or despotic than that exercised by the convention-

alities which govern our living. All stages of life from infancy to old age are under its domination. It dictates the education, the manners, the walk, the dress, the forms of speech, in fine the whole being. Beyond all contradiction the behests of fashion are vastly more influential in governing public conduct, than any arguments drawn from the teachings of structure and function. As a rule, when the conflict is between taste and reason, the victory will be on the side of taste. In nothing is this more forcibly displayed than in the apparel used to protect the body. It is not an agreeable task to peep into the wardrobes or dressing-rooms of our fair country women. I have no special taste for exploring museums of bizarre collections. Indeed, without a key to interpret the curious and ingenious mechanisms for clothing the form divine, such an exploration would be like an archæologist attempting Egyptology ignorant of cuniform inscriptions. I have, however, some knowledge of human anatomy in its broadest sense, and when I look upon the masterpieces of the human form, whether in marble or on canvas, a Belvedere Apollo, or a Venus de Medici, and contrast these with the dressed-out specimens of modern women, I am forced to admiration; not so much at the amazing ingenuity displayed in concealing the divinely appointed form, as at the plasticity and patient submission of mortal clay under the despotism of a conventional inquisition. Were these processes of mutilation and abnormality harmless, did the body consist of a mere mass of protoplasm, capable under the application of certain stimuli of assuming, normally, protean shapes, the subject might be passed over with

the feelings of a naturalist, but this is not so. These violations of the laws of structure bring with them serious penal inflictions, which, did they terminate with the original offender, might be dismissed with a sentiment of pity. But projecting as they do, their baneful consequences to successors, they become proper subjects for criticism.

Let me name a few examples as illustrative of my subject. For some time the profession has been speculating on the causation of catarrh, with its accompanying defects of hearing, the growing frequency of which can not have escaped general observation. Doubtless no single agency will explain the presence among us of this unpleasant disease, yet there are facts connected with this affection which to me are very suggestive. I cannot recall an instance in which I have met with the disease among females belonging to the Society of Friends—Dunkards or Menonites. If this, on more extended observation proves to be true, may not the head-dress peculiar to these people be accepted in explanation of their exemption? The bonnet which at one time overshadowed the entire head, as all know, has been gradually shrinking in its dimensions, until it has become a mere shadow of its former self, and offers no protection whatever to the head. As a substitute, I would not insist upon the quaint head-gear of the Friend, though I believe that any modification which will protect this part of the body, will lessen the tendency to catarrh.

Muscular Restraint.—A legion of physical imperfections arises from muscular restraint. Among these may be mentioned weak ankles, narrow or contracted chests, round shoulders,

projecting shoulder blades and lateral curvatures of the spine. The foolish concession to appearance, and the unwise partiality of parents for enforced systems of education, the demands of which bear no just proportion to the capacity of the infantile mind, constitute the initial or determining force of these physical imperfections. In many cases the weak ankles of children, are largely chargeable to the miserable practice of placing on the little ones, long before they are able to walk, boots tightly laced up the limbs some distance above the ankles. The confinement of the muscles by this constriction, prevents that free play of movement which reacts so favorably on all the elements of a joint; and that too, at a time when the growing forces are at full tide, so that when the time arrives for standing and walking, the muscles are unequal to the firm support of the joint. The consequence of this feebleness is soon seen in the turning outwards of the feet.

Take another deformity, that of bow leg. On the earliest signs of the unsightly curve, the limb is too often trammelled with irons, and the growth of the muscles arrested, when it is well known that if manual force be systematically applied two or three times a day, the limbs will gradually assume their typical form.

Again, in further illustration of our general text, take as an example a child who for one long, or two short sessions for six days of the week sits over the study desk compelled to assume a position in which from the inclination of the body the shoulders fall forward, the head being supported, most probably, on the elbows and hands. To this must be added the very important factor of two hours at

least of home preparation for the following day's recitations, during which time the respiratory functions having been reduced to a minimum of activity, the muscles of the chest are comparatively passive and æration of the blood tardy. Certainly no combination of conditions could be better devised for forming contracted chests and round shoulders. It is not long before the watchful eye of the mother detects the change in the figure of her child. She will probably discover this and take alarm, even when the pale face, the languid air and the capricious appetite of the child cause no anxiety; and then comes the second act in the drama of physical deterioration, namely, a resort to shoulder-braces and stays, in order to accomplish that which the muscles should be taught to do without restraint or incumbrance.

It is true that in most educational institutions for the young provisions are made for physical culture and these are in some measure antidotal to the evils complained of, but in my judgment do not at all compensate for that free unstudied romp in the open air, untrammelled by the hard and fast rules of calisthenics, so fascinating to the young child. Nor does the evil end here. While the forcing process which is to stimulate the mental powers far beyond the real capacity of the immature and growing brain to receive is in progress another is inaugurated which is to qualify, especially the female child to acquit herself with distinction when the time arrives for entering the great world of society, or as Thomas Brown would style it, "for the frivolous work of polished idleness." The gait and carriage must be reduced to prescribed rules, the voice toned down to a drawl, or trained to

move like a mountain torrent. The muscular apparatus of the face must be taught to express, not the spontaneous and natural out-flow of feeling which wells up from the magic chamber of the heart, but rather to produce an effect; and so this work of transformation goes on until it culminates in the full-blown society girl. Is it any wonder that under such a scheme of education, conducted throughout by a studied disregard of both the physical and mental constitution and exercising as it does such tremendous drafts on the nervous system, that the world is becoming filled with a class of flat-breasted, spindle-limbed young women, unfitted for the varied and responsible functions of womanhood, qualifications too, which under a different regimen and directed into proper channels would exert a most potential influence on all great social and moral problems of the age.

While thus plain spoken on the frivolous methods of living, I do not wish to be understood as being unfriendly to the highest cultivation of the mental and physical powers if conducted on lines in harmony with the organization, nor to any technique which may conduce to personal grace or elegance of manners, so that the manly or womanly personality of the individual be not sacrificed to the Moloch of sentiment and sham. Indeed, indifference to these things is inexcusable in either man or woman, as not only lessening their influence in the world, but in many respects disqualifying them for the highest discharge of the duties of modern life. Valuable as may be the unpolished diamond, yet it is only after the wheel of the lapidary has worn away the dull incrustations that its true bril-

liancy is revealed and the gem is fitted to adorn the brow or the breast of beauty.

Bodily Constriction.—In the further discussion of my subject, I may next notice the evils of pressure consequent on abdominal constriction. Whatever may be said in regard to Greek and Roman life, the infinite care which these people displayed in developing and maintaining the very best type of the human form is worthy of admiration. The Ionic “cheton” spoken of by the Attic writers and so often represented in the bronzes of Herculaneum, while it would not exactly satisfy the modern idea of dress, was at least free from the charge of interfering with the contour of the human figure. The painters and sculptors of those classic days were reverent students of nature. The delineations were true to life. Their works furnish us with no hour-glass contractions of the human body. The constriction of the waist operates injuriously on all the organs. The extent to which the liver may be damaged by extreme constriction of the waist, is well illustrated by a case quite recently reported in the *British Medical Journal*, in which a considerable portion of the left lobe of the liver had been separated from the right, the two being connected only by a band of connective tissue, and which enabled the operator to remove the detached mass without difficulty. In the expression of “modern living,” much is embraced. It includes culinary pharmacy, over-feeding and drinking, insufficient or injudicious exercise, improperly heated apartments, and a disproportion between the hours of exercise and rest. Contrast, if you will, the muscles of the hardy country housewife, who bearing the cares and

responsibilities of a dependent family, bustles about the livelong day, in-doors and out-of-doors, eats with a relish her plain and simple fare, repairs at seasonable hours to bed and sleeps the sleep of the beloved, undisturbed by dyspeptic nightmares and rising with the golden dawn resumes the round of domestic toil with a clear head and supple limbs; I say, contrast this type of a class with that of another, the woman born to luxury and ease, whose capricious and exacting taste taxes the art of the professional caterer, who drags out the morning hours toying with some crazy piece of embroidery or trashy novel, lunches at one, rides out in the afternoon for an airing of two or three hours, returns to a dinner of five or six courses at seven, completes the evening at the opera, the theatre or the assembly, and coming home after midnight, crawls into bed weary and exhausted in body and mind, only to rise with the best hours of the morning gone, for another day of aimless routine life. Can it be doubted that in the first case, with a digestion unimpaired, with the products of textural change consumed by functional activity and eliminated through the proper emunctories, the woman should possess a vital resistance and a tone of tissue altogether superior to that of the other, whose habits of living must necessarily favor their faulty metamorphosis?

To these same agencies must be attributed that brood of nervous and hysterical evils for the relief of which the gynecologist, too often I fear, invades the domain of womanhood, around which her whole sexual nature revolves, and which, save only in the direst extremity, should be sacred against all operative intrusion.

Late marriages constitute another social evil, the penal inflictions of which involve both sexes alike. Pride and luxury determine long engagements or deferred proposals. Marriage, it is believed, necessarily involves an establishment, a display, a retinue of servitors. The good old notion of two souls being united in wedlock for the purpose of being mutual helpmates, and patiently together working up from modest beginnings to affluence, seems to be entirely at variance with the modern idea of this relation.

The Foot and the Shoe.—It may be thought by some persons that the subject of the foot and the shoe is not of sufficient dignity to appear in a public address. The Romans and the Greeks thought differently. The literature of both peoples is full of references to the shoe worn by both sexes. So important, indeed, are the feet to the well-being of the body, that whatever impairs their usefulness, either for support or locomotion, becomes a positive calamity. Nothing can be more unlike the human foot than the modern shoe. Let any one leave the impress of his or her foot in the wet sand of the sea-shore and then place alongside of the imprint a fashionable shoe; that the two were ever intended for each other would scarcely strike a child of the forests. The North American Indian entertains juster notions about clothing this portion of his body than does the civilized denizen of New York or Philadelphia. Compare the moccasin with the shoe of the city belle. It is the imperfect adaptation of the shoe to the foot which constitutes the fruitful source of tired ankles, corns, bunions, overlapping of the toes and in-growing nails. Some idea

may be formed of the magnitude of the evil from the fact that of 800 patients under the care of a prominent chiropodist of Philadelphia, the great majority of the defects were entirely attributable to the high heels and the contracted toes of the shoes. Especially do these physical encumbrances arising from a blind submission to social laws operate disadvantageously to our fair women at the beginning of the new dispensation requiring both muscles and brains, and when her friends propose to sweep away all the old traditions and claim for her the earth with all its masculine employments.

Games and amusements which in themselves are proper and praiseworthy too often become developed into a craze, working both moral and physical mischief. Professor Leuf, himself a professional in the national game of baseball, has described the pitcher's arm, a condition of overtoned function and one in which all the anatomical elements of the upper arm are involved. There is also the tennis-arm and the swollen, supersensitive prostate of the bicyclist, both due to the abuse of popular amusements.

Defects of refraction or visual defects constitute another class of affections fairly attributable in many instances to social influences. The number of children which may be seen in our streets any day wearing glasses has become a matter of common observation. It is far from being probable that the most exquisite piece of mechanism, the human eye, came from the Divine Artificer imperfect. Because eyes are young, it does not follow that they are thereby better fitted to sustain prolonged use. Just the reverse is true, and it is high time that parents

and educators begin to recognize the fact. The power of the eyes for continued use, like that of other organs of the body, is one of gradation. It moves in the general procession and strengthens with the advance in life until development has attained to its zenith. Not only so, but the eye being a part of the body, it must suffer or rejoice through the operation of general causes. A bone may have its normal curves changed, a tendon may slip from its appointed groove, or a blood-vessel may be destroyed, and yet very little disability be realized; but the eye is made up of such extremely delicate structures and acts according to such fixed physical laws, that not the slightest alteration of a curve or the mobility, or density of its media can occur without great vitiation of function. To exact, therefore, long hours of study from children of a tender age, involves a degree of functional strain altogether disproportionate to the structural resources of the organ and, by disturbing the orderly processes of nutrition, give rise to derangement, and its companion headache. That the picture is not too highly colored or the causation overstrained, we have only to contrast the children born and reared in those portions of the country not too much dominated by the methods of modern civilization, and who rarely demand a resort to artificial aids to provide for abnormalities of vision. The only remedy for the evil where infantile scholarship is insisted upon is the Kindergarten or object system, the most natural and effective method of impressing the young mind.

Kidney Disease.—Is there any reasonable explanation drawn from sources of a social nature for the great frequency

of those kidney disorders which come more particularly under the care of the surgeon as gravel and stone in the bladder. For maintaining the general health at the highest physiological standard, a proper quality of food and the proper disposal of tissue waste are essential conditions. Along with wealth and luxury come the abuses of the table. Americans are fast becoming a nation of dyspeptics. Our country is so rich in the products of every zone that nowhere else in the world can you find such a variety of foods, animal and vegetable. These foods, manipulated in a thousand ways by the subtle art of the professional cook, almost necessarily betray one into excess, and also create the desire for wines and other alcoholic beverages to aid the stomach in disposing of its plethoric supply. In great cities, which furnish relatively the largest number of cases of kidney disease, affecting preëminently the mercantile and sedentary classes, we find just the conditions favorable to their development. The competitions of trade keep the merchant always at white heat. Time is golden, and the street-car and other means of conveyance annihilate distance and the ride is substituted for the needful walk. A hasty lunch at the most convenient restaurant satisfies the inner man until the business of the day is closed, when, weary and worn, he is driven to his home to partake of a course dinner, the balance of the evening to be spent on the lounge with the evening paper or the latest periodical. To the literary man the fascinations of the study and the library charm him away with their siren voices from the fields and the highways, until bodily exercise grows distasteful and repugnant. In the

meantime there has been no provision made for the waste or tissue metamorphoses of the body through that great agency, exercise. These accumulate in the blood, the internal eliminating organs, of which the kidneys are chief, are overtaxed, and then follow the evils of malassimilation and of excretion, in the form of urates and oxalates, often resulting in the formation of stone.

In conclusion, may we ever hope for a time when the race will realize that these bodies which we wear, which God has so highly honored by his own incarnation, are sacred temples to be kept in harmony with recognized physical laws, and not to be made instruments of mere animal gratification.

HUMORS OF TRAINING.*

BY BLAKELY HALL,
OF NEW YORK.

My experience in athletics has been tolerably large. Besides personal efforts in that direction I have watched the athletes of various countries with a good deal of interest. I have come to the conclusion, as far as health is concerned, that every man must of necessity be his own judge. For instance, I have known two men to start in to train on exactly similar lines, but with thoroughly opposite results. I think the most amusing thing of the sort that I ever knew was the experience of Colonel John McCaull. Some years ago he decided that he was growing too stout. He weighed two hundred and sixty or seventy pounds, his activity became a thing of the past and the girth of his waist grew visibly. He went up to the New York Athletic

Club and put himself in the hands of the trainer. The trainer looked at Colonel McCaull with grave misgivings and announced that he would begin by taking ten pounds a week off of him. Then he enveloped the portly form of the colonel in heavy flannel clothes, pulled a series of thick "sweaters" over his rotund body, bound a handkerchief around his neck and led him on a run around the suspended track of the gymnasium.

The run terminated at about the end of thirty paces, when the colonel sat down and breathed hard, but he was a man of perseverance and he clung to it. After he had made the circuit three or four times he went down to the third floor of the gymnasium, lifted dumb-bells, swung Indian clubs, took a cold plunge, was rubbed down and walked back to his residence. That night he ate a dinner that startled the entire household. The following day he went through the same performance except that he ran half a mile more, and at the end of a week he mounted the scales with a glowing face and a heart full of hope. He had gained exactly eight and a half pounds. The trainer was mute for a time, and then came to the conclusion that the colonel had not taken enough exercise. The result was that the next week he pounded around the place with a vehemence that startled the neighbors, was pummeled and rubbed by professional massage operators, lived on a fighting man's diet and finished the week eleven pounds heavier than he had begun. Thereupon he definitely abandoned the system of training which is of world-wide repute.

Throughout all this tumultuous and violent exercise the colonel did not touch a vegetable because vegetables

*From the Philadelphia Times.

are supposed to increase the weight. That is a recognized rule among trainers. A short time ago Colonel McCaull fell in Chicago. He came to New York, put himself under a physician's care and was told that he must reduce his weight. He smiled, for he had talked about it a thousand times without success. The physician told him to go off and eat nothing but vegetables. The colonel did so and the result is that he has lost about thirty pounds in the course of six weeks. I have never seen him looking better than he is now. I give this illustration to show that rules in training are bosh.

It may be said in a general way that exercise is the most trustworthy antidote for extreme leanness or unwieldy bulk. I have never seen a fat carrier in my life. That fact is significant enough for the average fat man. Let him go forth and walk and he will get thin, with one very important proviso, and that is that he does not drink after his exercise. If a man walks six miles a day at a good round figure it will take him down from a heavy weight to good athletic proportions in time, but the walking will not do it alone. He must be careful not to drink anything for an hour or two after the exercise and at all times during the twenty-four hours he must beware of liquids.

One reason why Colonel McCaull failed to train down during his violent exercise was because of the inordinate eating and drinking which followed his work. When trainers give men whom they are trying to train down from heavy-weights to light-weights apple sauce and cold tea to drink for supper they know exactly what they are about. After a lot of exercise the stomach—indeed, all the vital organs—are so

thoroughly aroused and healthy that the assimilation of food and drink and the subsequent metamorphosis into flesh is easy.

Liquids make fat. There is no doubt of this in my mind, though I am fully cognizant of the fact that a good many people will deny it. The character of the liquids has a good deal to do with it, but the practice of drinking invariably leads to unwieldy bulk. In Spain, where men drink little, a fat man is unknown. In Paris, where the men content themselves with sipping thimbles full of absinthe or small cups of black coffee, the French are thin to a remarkable degree. The women, on the other hand, drink great quantities of champagne, Burgundy and latterly of beer, and they are as a result prone to stoutness. In England, men drink ale and beer, and they are a thick-necked, pudgy and heavy race as a rule. I had observed all this many times, and when I went to Germany, where I knew the consumption of beer was very great, I was prepared to find fat men in abundance. I was not disappointed. There would seem to be absolutely no end of big, corpulent and unwieldy men in Germany. While they are in the army they are slim and splendid looking warriors, but two months after they leave the ranks they become heavy, puffy and beefy to the last degree. This is even so in the ranks among the other soldiers, and the cavalry were men of such extraordinary weight that they always excited comment from strangers.

I may remark incidentally that this did not surprise me. I do not believe in the English fad that riding reduces a man. On the New York mounted police force they retire the heavy men every year. If I am not mistaken the

limit is 165 pounds. As soon as a policeman gets beyond that weight he is taken from the mounted force and allowed to perform his work on foot thereafter. I do not remember ever to have seen a more alert, powerful and athletic lot of men than those of the mounted police of New York. The reason is obvious. They know they will be retired if they get beyond a certain weight, and the result is that they keep themselves in perfect trim by exercise and abstinence from liquids. While the rank and file of Germans were fat, I have observed that the officers were invariably slim and almost slender men, who presented a splendid appearance in uniform. I devoted a good deal of deep and strenuous thought to schemes which would enable me to get news about the principal persons of the Empire, and among others it occurred to me to put myself under treatment with Bismarck's doctor, the famous little Schweninger. I found him a remarkable and a delightful man.

He knew a little English and was very anxious to improve his accent by conversation. He is a creation of Bismarck's more or less. He looks like a Russian Prince, has the most piercing black eyes I have ever seen, a close-clipped black beard and moustache, massive wavy coal-like hair, and a quick, incisive and nervous manner. He became disgraced at the very outset of a promising medical career by an affair with the wife of one of the professors in the college where he occupied a small position. The wife was a beautiful Viennese woman and she had been married to a large and beery professor of chemistry when very young. When she met the handsome and fiery Schweninger she fell violently

in love with him. There was the deuce to pay, a terrific exposure and some sort of an affair between the doctor and the professor which resulted in Schweninger's imprisonment. Bismarck had taken an interest in the case from the fact that Schweninger's actions toward the woman had been exceedingly manly throughout. The young doctor came out a ruined man and tried to practice in Berlin, but there was no hope for him until one day he was sent for by the Chancellor of the Empire. In an hour Bismarck had made his fortune simply by the mighty influence of his patronage. Now the two men are close and fond companions.

I explained to Dr. Schweninger after I got to know him how eager Americans were to hear any actual facts about Bismarck, and a great many of the facts and incidents about Bismarck which I cabled from Berlin came from the doctor—of course with the full knowledge of how and where I was going to use the information. Bismarck's weight was about 260 pounds when Dr. Schweninger began to treat him. Without medicine, violent exercise or any other extraordinary means the weight of the Chancellor was reduced to 165 pounds, and he is now as fine a looking man as there is in the German Empire, as far as physique is concerned. The Schweninger treatment is elaborate, but the main features are that the patient must not eat and drink at the same time. His principles have been thoroughly adopted by the officers of the German army, and that is the reason why the officers are such a slim and good-looking lot of men. They cannot drink beer, and that is an awful cross to the German, but very few men can drink beer and keep a waist.

PUBLIC HEALTH A PUBLIC DUTY.*

BY CHARLES N. HEWITT, M. D.,
Secretary of the State Board of Health of Minnesota.

* * * * *

There is but one way to make our undertaking of to-night other than a meditation on death, and that is, to remember that our work in this Association is to combine the efforts of all who will help, to realize, on this continent, in the lives of its peoples, the practice of hygiene, which is "to secure for all the most perfect action of body and mind so long as is consistent with the laws of life; to help all to make growth more perfect, decay less rapid, life more vigorous, death more remote." This summary by one of our great leaders, gone on to his reward, is an epitome of Public Health. By it we mean that body of knowledge; both as a science and an art, which teaches the conditions upon which man may attain the highest, longest, most efficient and enjoyable exercise of all his powers. Note the breadth of the field covered by the definition, for it includes all we know of the environment of the race, all influences of whatever sort which in any way affect, or may be made to affect, the welfare of man,—beginning so far away as the sun, including heat, light, electricity, and the atmosphere with its conditions; the influence of mother earth and her products,—soil, water, vegetable growth and decay, with the swarms of animal life below man; then in his own sphere, the influence of race, heredity, locality, education, family and home life, society,

religion,—in fine, all that which makes possible, and grows out of, what we call our civilization. I have named but a title or two of the catalogue of these influences, but enough to show what an encyclopedia the written science of health would be; and for the simple reason that all knowledge has, of necessity, a bearing on human welfare, and that the welfare of the individual is bound up in the welfare of the whole, while that of the whole may be easily, and is constantly, affected by the suffering, as by the deliberate act of the individual. If, as is not unlikely, the indigestion of a ruler or prime minister has plunged a nation into war, it is a much more frequent occurrence that the sickness of an obscure person—a tramp, if you please—has started a train of direct results which inflicted on a people a worse than war—a pestilence—and brought misery, sickness death, with a host of other evils, in its train.

* * * * *

I assume that the heads of a family ought to have a more direct personal interest in public health than the health officer, unless he be a father too. This seems a strong statement at first; but it rests on the truth that the knowledge how to avoid sickness, prolong life, increase efficiency, and by so much add to the sum of healthful enjoyment, should be the common property of all, and the bounden duty of parents. One need know but little of the science of numbers to master the art of their use in the business of life. We need not know the methods of the signal service to use its forecasts of weather, nor the science of the electric current to avail ourselves of its use for light, or other expenditure of its power for our comfort or convenience. It is just as true

* Abstracts from the President's address at the Sixteenth Annual Meeting of the American Public Health Association.

of the science of Public Health as respects the benefit an individual or a community may derive from the use of its art in every day life. It is this practical distinction between the science and the art which clears the way for popular coöperation in matters of health, and makes it possible for all who, seeing the advantage and the duty, will join us in our quest of to-night.

* * * * *

Another common mistake, which it will help us very much to have corrected, is the idea that the work of the health officer is beyond common apprehension and interest. So it is if your health, that of your family and your community, are unaffected by sickness, infirmity, or premature death; if there are no invalids in your homes. If you are free of all these things and in no danger of infection or nuisance from without your borders, you certainly have no occasion to think of Public Health, nor its servant, your health officer. That blessed state will be yours at the millenium, not before. No other branch of human effort so constantly teaches that you are your brother's keeper, and he yours, and in a more intimate sense than one would suspect who had not studied it, or than one would choose who had the power to select. So, whether we wish it or not, Public Health as an art is the bounden duty of every intelligent person, judging by the most narrow of standards—selfishness.

* * * * *

The first essential of any sanitary authority, now, is executive power, and its systematic use in the regular and scrupulous performance of every-day duty, as defined in the law and suggested by every-day experience. This almost self-

evident proposition is constantly neglected in legislation for organization, and is very frequently violated by boards of health, who seem to favor the popular idea that an exceptional occasion is necessary to the highest exercise of their power, and infectious diseases of the classical type are their selection, with a proper admixture of panic. Panic is no advantage any longer, if it ever was, as a help to sanitary organization and work. Infectious diseases are not the leading causes of our sickness and mortality. It is only in the exceptional severity of plagues like yellow fever, as it has prevailed in Florida, for example, that infectious disease counts the most victims in the sickness or death-roll. That epidemics prevail at all, in our time and country, is somebody's fault; for if there is one thing more than another that modern hygiene ought to be able to do, it is to forefend their attack, or control them if they effect a lodgment; and boards of health and health officers have to learn that the most public and pronounced activity, after the invasion of infectious disease, is no substitute for the quiet, unobtrusive work which, in daily faithfulness would have detected the first case, and controlled its spread.

* * * * *

The very large mortality from non-infectious disease, under five years of age, is, in the light of our present knowledge, no longer tolerable, and boards of health should move now, and positively, for its material reduction. By the last census this mortality was 43.7 per 1,000 of living population for the whole country, while in thirty-one registration cities it was 88.4 per 1,000. The mortality under five years to total of all ages was given as 39.8. The deaths under one year were, for the

whole population, 120.9 in 1,000 living, while for the cities it was 267.5. This does not tell the whole story, as the statistics are estimated to fall from 15 to 30 per cent. below the facts. We have no means of accurately estimating *the sickness rate* which accompanies this mortality, but may assume that it is enormous. The life of the child under five years of age, in all classes, is spent in or near its home, and in most cases almost wholly there; so that we have to look there for the causes of its ailments, and we know that infection finds it there. Now put this series of facts together, and what better popular reason can we give why parents and all thoughtful people should join us in the work of diminishing this literal and preventable slaughter of infants going on all around us? What better argument for persuading physicians to make domestic sanitation a serious study, at least so far as to help us to the facts we need?

A WORD ON THE VENTILATION OF CELLARS.*

BY WILLIAM T. CARTER, M. D.,
LOUISVILLE, KENTUCKY.

No one has an approximate idea how many deaths have been caused by foul cellars and badly constructed sinks and drains. That some families continue to live with impunity in houses under which the foulest and most unwholesome cellars exist, can at least be partly accounted for. In instances of this kind it will be found that constant use is made of the cellar. That people are going in and out in search of different articles, often carrying lighted candles or lamps in their hands.

In this way fresh air enters daily, the poisonous gases find exit through the open doors, and the house thus frequently escapes contamination. Each individual being only exposed for a few moments at a time, the system is able to resist infection. But if a cellar of this kind is allowed to remain entirely closed for several months together, then poisonous gases and foul air will permeate the floor above, gradually making their way into every room throughout the whole house. This last remark has been most painfully illustrated by the breaking out of typhoid fever in the unfortunate Wörner family of this city (Louisville). Many paragraphs in reference to this stricken family have lately appeared in the daily papers. No one has, however, so far as I know, attempted to give the supposed cause of their great misfortune. This family consisted of six persons; father, mother, three children and sister-in-law.

Alice, the oldest child, age eleven years, was the first one attacked. The father called me to see her on the 25th day of last June. She had typhoid fever in its most virulent form. Mr. Wörner and his sister-in-law soon began to complain, showing signs of taking the same fever. The latter, age twenty-four years, was sent home to her parents in the country, where she was critically ill for several weeks. Mrs. W. and Amelia, age three years, were at once taken down with the same disease. Minnie, age nine years, was now complaining of headache and loss of appetite. Owing to the difficulty experienced in obtaining nurses, and the danger accompanying their sleeping in the infected house at night, it was thought best to move the whole family to the hospital without delay.

*From the *Medical Herald*.

Mr. W. only lived a few days after reaching the hospital, his wife and Minnie both dying on the same day about two weeks after his death. Alice, who was convalescing when she left home, was taken by friends and cared for in a private home. Amelia's case was the most distressing and protracted I ever knew, for she was only able to leave the hospital within the last few days, having been there fully three months. She was dangerously sick most of the time.

The situation and surroundings of this family are similar to their neighbors' in every respect, except in the condition of their cellar and kitchen sink. The cellar was situated under the combined dining and bed room. It was walled with thick planks and had no air grates or ventilators whatever. The door opening into it was in the kitchen floor and was kept closed by placing a table upon it. The walls and floor of the cellar, and the ground under the kitchen floor, were found upon examination to be damp and mouldy, having long been kept saturated by several leaks in the drainage pipes. No use was made of the cellar, the door probably not having been opened during the last two years.

This fatal outbreak of fever can doubtless be justly attributed to the foul air in the cellar, together with the poisonous gases generated under the floors, by the leaking drain. During, shortly before or since this time, only one case of typhoid has occurred, outside of this particular family, in the whole neighborhood. This case occurred in the person of a young lady who slept one night in the infected house. I was her physician also. Her fever was of the same type presented

by the other cases. Recovery in this case was very slow and tedious. After the Worner house had been well disinfected, the cellar remodeled, the kitchen sink removed, a family consisting of several adults with children moved in. They have since resided there with complete freedom from fever or any other disease. They occupied the house in about two weeks after the sick folks left it.

All cellars should be so constructed as to allow of perfect ventilation by the free admission of fresh air. The majority of house keepers make a mistake by closing the air grates under their houses during the winter months. By this means they try to keep their floors warm, but they shut off all ventilation of the vacant spaces under their houses, thus endangering the health of their families. In mild weather the air grates should be unobstructed at all hours day and night. In very cold weather, if it becomes necessary to close them in order to prevent vegetables from freezing in the cellar, they should be opened to admit fresh air for a few hours, at least every day. Of course, all decaying vegetable and animal matter must be removed immediately. All drains, sinks and water pipes should be looked after and kept in good order by a first-class plumber. If no disease can be prevented by this means, the system can, to say the very least, be maintained in better condition to resist the onslaught of disease when it does come.

A STERILIZED MILK DAIRY.—A Russian doctor has established a dairy farm near St. Petersburg for the express purpose of supplying sterilized milk, free from microbes, for the use of hand-fed infants.

FALSE-TEETH PLATES.

BY DR. DAVID GENESE,
OF BALTIMORE, MD.

In your February number I see a notice of "Poisoning from False-Teeth Plates made of Rubber." Permit me space for the following few lines, that may be a guide for those compelled to wear the much-abused rubber, and those who have to make it into dental plates.

Rubber, as we all know, is a vegetable compound, and converted into vulcanite by heat, after it has been mixed with a percentage of pure sulphur. The coloring matter is chiefly some oxide of metal, that of *lead being of a bright red*, while the oxides of bismuth, antimony, aluminum and manganese will give the rubber the brown color running to maroon, and the pink is obtained from aniline colors.

But it is not in the metallic oxides used in preparation of rubber that danger lies (as the percentage of rubber sore mouths is so small—1 in 50,000), but in the vulcanization itself, which instead of converting the prepared rubber as received from the depots into vulcanite can be, by carelessness, converted into a porous plate, containing hundreds of thousands of minute holes, each able to absorb and retain the fermentation from food products, and by its presence constantly against the tissues of the mouth cause blood poison. This porosity is caused by overheating the rubber, thereby converting the sulphur in the mass into sulphurous acid, destroying the fibre of the rubber by decomposition and setting free the metallic oxides. Whereas, if rubber is cured or vulcanized properly at a temperature never exceeding 280° to 300° Fahrenheit, it

will retain its elastic fibres intact, the sulphur will be in its natural state, permeating the rubber, and holding the coloring matter so hermetically sealed in its substance, that no moisture will dissolve, even strong sulphuric acid will not touch it.

It is the duty of those making rubber plates to attend to these details in the process of manufacture, but where cheap dentistry is sought after, hurry is the result and the consequence very dangerous. No *dentist* of repute will permit a rubber plate to leave his establishment that gives the least indication of being porous, and it can be easily detected. Rubber well converted into vulcanite should be very dense and cut with a clean surface, entirely free from minute holes or odor; it should be capable of a high polish, and show no specks, and the moulds generally made of plaster should be removed as soon as the vulcanization is completed, or the plaster will decompose and the plate be attacked by the ferment and minute holes on the surface be the result.

If the wax used in mounting the teeth is not thoroughly removed it will cause softening of the rubber. No amount of curing will remove the mischief, and a soft spongy plate will result.

If the heat is raised to 320° in vulcanizing the plate gets all the sulphur altered in character, and should the temperature be allowed to rise beyond that by carelessness on the part of the party in charge of the machine sore mouth is sure to follow wearing the plate from such a source.

Vermilion-colored rubber should never be used and the public should not accept a dental plate without being assured of that, and they can easily

detect porosity and refuse to take the case.

It is not only rubber dental plates that have danger in them. Silver plates, with solder containing inferior metals, should be avoided. Even gold has danger, if not of a high standard, while the greatest protection to those using dental plates of any form is absolute cleanliness. They should be thoroughly cleaned in warm water at least once a day, using plenty of castile soap and occasionally a little whiting, and the mouth should be kept well brushed, even if no teeth remain, and occasionally an astringent lotion used to soft tissue that it may be kept in a healthy condition.

Any irritation felt from wearing the plate should be submitted to the dentist as soon as possible for correction, as such irritation, especially if specific disease ever existed, is likely to cause a recurrence of the trouble, and the dental plate be blamed for it.

ANCIENT PEOPLE ON THE NEOSHOSHO RIVER AND MIASMA.*

BY W. S. NEWTON, M.D.,
OF OSWEGO, OHIO.

Having made an extensive search in the Lower Neosho Valley in prehistoric anthropology for the United States National Museum near this place, I find many matters relative to the ancient inhabitants of the country in the distant past of value to the physician and those interested in archæology. In the Valley there are sites of ancient villages, with roads and cultivated fields, or rather traces and evidences of them, now dim with age. The fields were well chosen in the most fertile lands, in a region where crops would

grow with the least possible labor and yield the most abundant harvests.

These sites were chosen where inundations would not reach them when on the flood-plain of the river, and inundations occur not oftener than once in a decade. They were also chosen where wood, water, fields, pasture and secrecy could be secured, and never in a healthy location. The past seventy-five years the Osage Indians have occupied some of these village sites. These villages were chosen because they were protected from cold winds, and where spring and winter pasture could be found. Some of these people were fish and mollusk eaters, hence they located where these animals were abundant and easily captured. At these mollusk villages shells are yet seen several feet below the surface. The cutting tools they used were sharp flints brought from Missouri, twenty miles east, and not worked into shape, and no metal tools or pottery are to be found. Flint spears and arrow-heads, finely worked, were abundant, and sandstone mortars and pestles were common.

Protection and security from enemies they had in view in the location of villages, and fires were often made in holes so as to hide the light at night. Good spring water, coming from a neighboring bluff, was used at the village by the people, but often swamp and pond water was used in hot weather, poisonous with cryptogams and germs microscopic and phenomenal, such as would kill a white man or negro if used in summer. The village sites are found among swamps, and always on low lands just above high water, where the present people cannot live and enjoy health on account of miasms. Even with good drinking-

* From the *Medical Bulletin*.

water our Kansas people cannot now live on the sites of any of these villages and enjoy health. Near them, however, are high, breezy, healthy highlands, the homes of our people, and from these facts we are led to infer that the early people here were constituted so that miasma would not hurt them; that they knew how to avoid it, or their intelligence was altogether a blank about swamp miasm.

Fifteen to twenty years ago the Miami, Ponca, and other immigrant Indians came to the same country. Some of them settled on the bottom lands within twenty miles of here and miasma nearly exterminated them. Why did these prehistoric people withstand, and the historic succumb to this cause? By their molluscan food and cultivated fields we know they lived in their paludal villages in the summer. We find the northeast side of a stream in the Southwest is more healthy. The southwest winds sweep over these places and carry germs to the other side, making them unhealthy. The early people here cared not for these facts in choosing sites for their villages.

The whites and negroes now do care, and they have abundant food, homes, and the comforts of life; but these ancient people lived in huts, with seasons of want and famine, and poor dress, exposed to night air, when miasm is supposed to be abroad. How did they withstand their environment and survive?

The same facts about our prehistoric people and sickness from the miasms of swamps apply to the people in the great Mississippi Valley everywhere. We suppose the African can and does live among swamps better than the whites. Were the early people Hamites, akin to the negro?

Did diseases such as we speak of keep the people weak, few in number, and finally cause their total extinction? War may have aided miasms, but spear, bow, and club were less deadly and powerful than these germs.

THE HYGIENE OF THE NOSE AND THROAT.

BY DR. CARL SEILER,

Instructor in Laryngology and Lecturer on Diseases of the Throat and Nose at the University of Penna.
(Continued from page 77.)

In another class of cases it is the larynx which becomes affected by the cold and this is particularly the case with singers and public speakers, because they are often called upon to use their voice in public when their vocal organs are in a state of congestion due to cold. Persons thus afflicted usually complain of hoarseness of the voice, a slight hacking cough with little or no expectoration a feeling of fullness in the throat and a dryness of the mucous membranes which is often very distressing. These conditions may last for several days in the milder class of cases and gradually disappear without further trouble; if the sufferer remains in the house and does not expose himself to any deleterious external influences such as draughts, excessive use of the voice, wet feet, abuse of alcoholic stimulants and so forth. It frequently happens however that the attack of "acute Laryngitis," as it is termed, assumes a graver aspect when the swelling of the mucous membrane threatens to close the passage of air to the lungs and thereby causes difficulty of breathing and a dry metallic cough closely resembling the cough of croup in children. In fact, the so called spasmodic croup is a form of acute laryngitis which causes a spas-

modic contraction of the muscles of the larynx thereby reducing the air channel. The face becomes flushed and assumes an anxious expression, a more or less severe pain is felt in the throat and the voice is reduced to a whisper. Febrile symptoms also make their appearance as shown by a rise in the body temperature and an increase in the pulse rate. In fact, the case is a serious one, particularly in childhood and early adult age and needs the prompt attention of a physician. And here I would like to speak a word of warning to parents and that is not to oppose any measure suggested by the medical attendant, no matter how severe it may seem; for many lives have been lost by the useless and obstinate opposition of parents to an operation proposed by the physician for the relief of the sufferer. In these cases a few minutes often turn the balance and the prompt opening of the patient's wind-pipe by means of the surgeon's knife frequently is the only means of saving life. If deferred until all the scruples and prejudices are dispelled by verbal argument the time for action has passed and the operation is useless except so far as to make death easy. Simple house remedies are as a rule useless and often do more harm than good because valuable time is lost before a physician is summoned to alleviate the suffering of the patient.

After an attack of this kind has passed the throat remains often for a long time in an irritable condition, the patient coughing frequently, especially in the morning and expectorating pellets of glary mucus resembling closely boiled starch, the voice remains husky and becomes hoarse after even moderate use and the throat feels dry

and full most of the time. If this is the case the acute inflammation has become chronic and the case then needs the attention of a specialist who is able to make direct applications to the diseased parts with a view to restore them to their normal condition. This can be done by patient attention and perseverance in the treatment, for "*chronic*" does not mean "*incurable*" as so many persons think and medical science and skill have arrived at a point at the present day, which enables them to accomplish results which were not to be dreamed of but a few years ago.

The same rules given in the last number of the "ANNALS" to prevent a recurrence of inflammation of the tonsils, viz: Bathing the neck with cold water morning and night, apply also to this condition and if persisted in the daily baths will strengthen the throat and materially lessen the fatigue from prolonged use of the voice.

Chronic Laryngitis is also often caused by a faulty use of the voice and particularly in women by the pernicious habit of the so-called abdominal breathing which is taught by teachers of singing and elocution. As this is however a subject which requires more lengthy explanation it will be better to defer its consideration until the next number of the "ANNALS."

DO LIBRARY BOOKS SPREAD INFECTION?—The conclusion of the authorities of Dresden, as the results of carefully conducted investigations is that they do not; but a recommendation is given to dust books well before reading them, and never to wet the finger in the mouth for the purpose of turning over the leaves.

THE CAUSATION OF COLD-WEATHER DISEASES.*

BY HENRY B BAKER, M. D.,
Secretary Michigan State Board of Health.

1. That diphtheria, scarlet fever, and small-pox increase after the atmosphere is cold and dry, and decrease after the atmosphere is warm and moist.

2. That the three communicable diseases named above probably generally enter the body through the air-passages, and that the reason why they increase after the cold months is because of the greater susceptibility of the air-passages in those months, and that is the reason why the curves for these communicable diseases are found to follow the curves for influenza, tonsilitis and bronchitis.

3. That the non-volatile salts of the blood exuded in excess into and upon the mucous surfaces of the air passages are capable of leading to an inflammation which is called "influenza," "tonsilitis," or "bronchitis," according to the portion of the respiratory tract involved.

4. That, other things being equal, the non-volatile salts are left by evaporation on the mucous lining of the air-passages, in proportion to the dryness of the air inhaled.

5. That inasmuch as the absolute dryness of the air ordinarily depends upon its coldness, the inflammations of the air-passages should be expected to rise as they do after the cold dry weather, and fall after warm moist weather.

6. That the non-volatile salts are likely to be in excess in the blood under some conditions of diet, or non-action of the skin or kidneys through

which, under normal conditions, they pass out of the body. Therefore,

7. That certain kinds of diet, or non-action of the skin or kidneys, may predispose to inflammation of the air-passages, and consequently to any communicable disease, which enters the body by way of the air-passages, to which the person may be susceptible.

8. That, aside from the cause herein assigned (non-volatile salts), no other known cause, capable of causing inflammation of the air-passages, is "present and acting" in proportion to the coldness and dryness of the atmosphere.

In connection with the foregoing, a few supposed facts, not entirely outside of the province of this paper, should be held in mind, because they tend to modify the force of the evidence herein presented:—

a. Vaccine virus (and therefore, possibly the virus of the cold-weather communicable diseases) retains its vitality longer in cold than in warm weather.

b. The danger of contracting a communicable disease is probably increased by exposure to the contagium in a badly-ventilated room, and rooms are most frequently badly ventilated during the cold weather.

But neither of these two statements is known to be true so nearly in proportion to the temperature of the atmosphere as to explain the close correspondence with which the curves of these diseases follow the curves representing the temperature of the atmosphere. And since it is proved in this paper that the ordinary inflammations of the air-passages also follow the rises and falls of the atmospheric temperature, and are believed to be non-contagious, their equally close correspondence with the temperature changes

* The conclusions of a paper printed in the Annual Report of the Michigan State Board of Health.

cannot be accounted for by the varying degrees of vitality of a virus, nor by bad ventilation, especially as they are so frequently traced to exposure to cold outdoor atmosphere.

9. That so far as is yet proved by statistics of large numbers of cases, the strongest controlling cause of inflammatory diseases of the air-passages is exposure in a cold, dry atmosphere.

10. That, excepting inoculation and other similar exposure to the specific cause of the disease, the strongest controlling cause of the spread of those communicable diseases which generally enter the body through the air-passages is exposure in a cold, dry atmosphere.

TIGHT LACING.*

A few nights ago a young lady in attendance at a ball in a suburb of this city (Detroit), fell while engaged in a dance, and, on being removed to an adjoining room, expired. It was discovered that, being inclined to *embonpoint*, it was her custom to lace to the extent of reducing her waist to a circumference consistent with the recognized standard, and to this custom, no post-mortem examination having been made, the death was attributed. Whether or not the etiology was correctly ascribed, the circumstance is sufficient to direct attention to one of fashion's most dangerous exactions. Any attempt to banish corsets from the modern lady's wardrobe would be futile in the extreme. She must wear them for the "support" which they supply, and the best that can be hoped for is that the more flagrant abuses accompanying them may be corrected. Na-

ture is very kind and endures without resentment many indignities, and in the extent to which she permits the thorax to be distorted, we have a striking instance of her consideration for feminine vanity, as it takes form in "enlightened" lands. In the darker quarters of the earth, the head is sometimes squeezed out of shape and, again, the feet are kept from developing, and yet nature often permits the fools to attain a green old age.

This subject was freely discussed before the Biological Section of the British Medical Association, at its late meeting, and the hygienic and the æsthetic bearings of the custom received attention. The *Lancet*, in referring to the matter, held the chief source of danger to lie in the fact that the compression of the chest by means of tight lacing is resorted to after ossification has been become quite complete. The stays which sensible mothers allow their girls up to the age of fourteen or fifteen, are soft and exert little more pressure than the waistcoat of a boy. At that age, when the figure naturally changes, the firmer support is taken into use, and the amount of harm it occasions is dependent on the degree to which support becomes compression. There are, no doubt, many girls who, desirous of making themselves conspicuous and, as they foolishly believe, attractive, tighten their waists to such an extent as to incapacitate them for taking exercise and for the necessary ingestion of food; they consequently become weak, pallid, and chlorotic. These evils are, moreover, intensified by the rapidity with which the compression has been applied, and all who are interested in their welfare should exert themselves to point out the egregious folly of such

* From the *Medical Age*.

a practice. Upon the æsthetic side of the question there is little to be said ; here, as in so many other controversial questions, *de gustibus non est disputandum*. Among the Greeks, for ages the arbiters of taste, the women wore an apology for stays, and we are told that at a very early period the girdle was strengthened by metal, and long before the Christian era a broad band or belt was worn next to the skin to support the breasts. According to Planche, the practice of tight lacing appears to have been introduced by the Normans as early as the twelfth century, and has been in use ever since. We apprehend the ordinary Englishman though he may wonder at, does not really admire a wasp-like figure. Both hygienically and æsthetically, tight lacing is a mistake. Yet it must be remembered that, partly as a result of climatic conditions, partly from abundance of food, and absence of severe work, and partly perhaps from the hereditary effect of sexual selection, a large portion of the young women of England, of the middle class at least, are disposed to the accumulation of fat in the breasts, and though from the age of seventeen to twenty-four the breasts may be firm and prominent, yet after that period they are apt, without artificial support, to become flaccid and pendulous. The advantage of support, however, is no argument for the employment of compression. Dr. Hoyle made a good hit in saying that no woman regarded herself as properly dressed unless she felt a little uncomfortable. He might have added that the proportion of discomfort experienced may be pretty safely taken as the measure of mischief being effected in the willing victim of tight lacing.

THE USELESSNESS AND HARMFULNESS OF SHOULDER-BRACES, FOR ROUND SHOULDERS AND STOOPING.*

BY BERNARD ROTH, F. R. C. S.,
LONDON, ENGLAND.

When we find an able surgeon like Mr. Walsham, surgeon in charge of the Orthopædic Department of St. Bartholomew's Hospital, London, not only advocating shoulder-braces, but even inventing a new one, still more injurious than most of its predecessors, because of its greater strength from being manufactured of solid rubber bandage, one feels inclined to rub one's eyes and to ask whether scientific orthopædic surgery is really advancing or whether we have gone back half a century or more.

John Shaw, whose works I have read again and again with ever-increasing pleasure and profit, criticized shoulder straps as follows : "The effect which this instrument (shoulder-brace or 'common back collar') produces in ordinary cases may be easily comprehended. If the shoulder blades be brought close to the spine by the straps of the brace and kept constantly so, there can be no use for the several strong muscles which pass from the spine to them. They must consequently waste and become nearly useless, while those on the forepart of the chest, being excited to resist the straps, will become increased in power ; and hence, when the brace is taken off, not only will the shoulders fall forward as in a delicate person, but the muscles on the forepart of the chest will predominate over those by which the

*From the *New York Medical Journal*.

shoulders should be held back and *pull* them forward."

This was written upwards of sixty years ago, and is so complete and simple a refutation of any supposed efficacy of shoulder-straps for stooping habits that I have little to add to John Shaw's scientific common sense.

In spite of these facts, ninety-nine out of a hundred medical men of the present day are in the habit not only of allowing, but even of advising patients to wear these instruments of torture.

The only way in which shoulder-straps might be worn with benefit—not that I ever recommend them—is well illustrated by the following anecdote, which is also culled from good old John Shaw: An eminent surgeon was consulted by a gentleman who became one of our first tragedians as to the best mode of correcting a stoop which he had acquired. The surgeon told him that neither stays nor straps would do him any essential good, and that the only method of succeeding was to recollect to keep his shoulders braced back by a voluntary effort. But the tragedian replied that this he could not do, as his mind was otherwise occupied. The surgeon then told him that he could give him no further assistance. Shortly after this conversation the actor ordered his tailor to make a coat of the finest kerseymere, so as to fit him very tightly when his shoulders were thrown back. Whenever his shoulders fell forward, he was reminded by a pinch under the arms that his coat cost him six guineas and that it was made of very fragile materials; being thus forced, for the sake of his fine coat, to keep his shoulders back, he soon cured himself of the stoop. He then showed himself again

to the surgeon, who ever afterward, when consulted whether young ladies should wear shoulder-straps, permitted them, on condition that they were made of fine muslin or valuable silk, for tearing which there should be a forfeit!

SALT.

BY EPHRAIM CUTTER, M. D., LL. D.,
OF NEW YORK.

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Common salt is everywhere present in the human economy. Early in his medical pupilage the writer spent a winter in the medico-chemical laboratory in testing the substances in the human body tissues and he found that salt was everywhere to be eliminated ere other tests could be had. This is a sufficient answer to those who years ago taught that salt was not to be used as food. Salt is excellent for the development of the hair, teeth and nails. It is reported that twenty kine were fed one winter without salt by the side of another set of twenty who were fed with the same diet but with salt. The salted kine went through the winter all right, but the others lost a good deal of their hair.

On the other hand an excess of salt produces a scorbutic condition of the system. This is paralleled in the vegetable kingdom. If you manure your plants too highly, you injure if not kill them, and manures are simply forms of soluble mineral plant food. A plenty of salt on the food is found to be a good preventative of intestinal parasites (worms.)

The soda or common salt goes to form the salts in the bile which are used in digestion; while the chlorine is found in the gastric juice, as hydrochloric acid.

Common salt never forms any of the gravels found in the human body. It sweetens the alimentary canal and prevents to a certain extent abnormal fermentation. It is said to keep the red blood corpuscles in good form and shape. It is very cleanly. It makes thirst because it causes too great a specific gravity of the blood for healthy work. In this it is unlike most other salts. In moderate amounts it agrees well with the tissues and does not irritate them. Even animals know the use and need of salt for they frequent salt licks, and kine and horses are fond of salt-marsh-hay. No patient is too sick to take salt, with few exceptions. In the state of nature it is not pure, but the other salts with which it is mixed are an advantage for they supply the needs of the body in this direction. It is not well to live on salted meats all the time as has been hinted. In the brine, Leibig said about seventeen per cent. of the nutritive salts of the meat are extracted and the residue made more difficult of digestion. Hence it is not well to salt meats heavily unless required by exigencies. Enough salt should be used to prevent fermentative vegetations destroying the meat, and but little more.

I knew once a diet of salt meat having been lived on almost exclusively, to be followed by cancer of the liver.

Salt is good for a relish—for an appetizer and to impart a pleasant flavor to both animal and vegetable food. Generally it is best for the cook to let the eater salt his food to his own taste, for there are some very nice distinctions of the palate here. I have known the salt flavored clam of New England to awaken an appetite for food which lasted several months.

It seemed as if there was a special power to this animal salt, as it might be termed, since the person in question had been eating salt from the salt-cellar on her table right along.

It is probable that we of these times do not realize the abundant provision of salt the world now enjoys. So many sources of rock-salt have been discovered in modern times that the expression "built of salt" as a value, has gone out of use.

Salt used to be an emblem of hospitality—a word typical of the very best people in the world. Be this as it may, Motherhood should use plenty of salt.

HAIR MATTRESSES.

BY WALTER F. ATLEE, M. D.
OF PHILADELPHIA.

I write to ask you at the present time to draw attention in your valuable journal to the discomfort and even danger arising from sleeping *upon a hair mattress in a very cold room.*

I am constantly being consulted, for instance, at this season of the year, by persons seeking relief on account of stiffness in the back when they awaken in the morning, rendering their getting up difficult, and, at times almost impossible. The persons who suffer in this way are invariably those who enjoy the "repose that marks the caste of Vere de Vere"; who, to be plain spoken, sleep on hair mattresses, and turn the heat from their rooms at night.

If you tell these sufferers to have the bed made with a folded blanket between the sheet and the mattress they are always completely relieved. This has been proven again and again by experience, and the reason of it is

easily seen. Hair is an excellent conductor of heat, as every one knows who has used a hair sofa on a hot day, or enjoyed a hair pillow on a hot night. When, however, the temperature of a room falls to 60°, or 50°, or 40°, or to below the freezing point of water, it is very hurtful to have the body, the warmth of which is diminishing as it always does in sleep, in direct contact with a good conductor, such as we know hair to be. And yet we know that a mother who would not allow her child to sit for one hour of a summer evening, on a stone door-step without an intervening mat or some other non-conducting object, will be perfectly satisfied to have this same little body resting for hours, when asleep, upon a hair mattress when the temperature of the room may be falling to the freezing point of water.

I do not think it necessary, or expedient, to dilate upon this subject, although rather an attractive one, as being novel, simple, and important, and only call notice to it in a quarter where it must receive attention.

—♦—
 DON'T TOSS THE BABY.—A writer in *Harper's Bazaar* very truly says that throwing a baby into the air and catching him again is always a risky practice, certain though the tosser may be of his quickness of eye and sureness of hand. A sudden and unexpected movement of the child in his mid-air flight may result in a cruel fall. A gay young father snatched up his baby boy one morning and tossed him to the ceiling. Twice the little fellow went flying through the air and came down safely into the waiting arms. The third time the excited child gave a spring of delight as his father's hands released him, plunged forward, and

pitching over the father's shoulder, fell head downward to the floor. When the poor baby came out of the stupor in which he lay for hours, it was found that, although no bones had been broken, the brain had sustained an injury that would in all probability render the child an imbecile. Another baby snatched from the floor and tossed into the air received a fatal wound in the top of the head from the pointed ornament of a chandelier. Still another child slipped between her father's hands as he caught at her in her downward flight, and although his frenzied grasp on the baby's arm saved her from falling to the ground, it wrenched the muscles and sinews so cruelly that the girl's arm was shrunk and practically useless to her all her life. These are extreme cases, but the fact of their occurring at all should be enough to warn one from the habit of relinquishing one's hold on a child when tossing it.

—♦—
 CAT DIPHTHERIA.—The Health Officer of one of the Australian towns has lately given an account of a small epidemic of cat diphtheria. He had four houses in which the children were sick of diphtheria, and in three of these houses he found that the cats had been suffering from difficulty of breathing and swallowing, and he surmised that the disease was transferred from them to the children.

—♦—
 BLUE-LINED WRITING-PAPER is almost universally manufactured both in this country and Europe. The School Commissioners at Mainz have, upon medical advice, decided that the blue lines are bad for the eyes, and ordered that all school writing-paper shall be ruled in black.

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EDITORIAL.

A NEW DEPARTURE IN THE DISPOSAL OF SEWAGE.

That great teacher Nature holds up constantly before us an object lesson in the way in which she disposes of the excreta of the lower animals. If we were to receive the dejecta from our horses and cows into buckets or barrels and so place these receptacles that, by means of pipes, the gases resulting from the decomposition of their contents would be conducted into our living rooms, the result would be very disastrous to health. But as the cow or the horse deposits his excreta on the ground, let us see what takes place. The air, having free access thereto, takes up all the gases of decomposition as they arise and from the atmosphere they are absorbed into and become a part of vegetable life. The rain from above falls and washing some of this dejecta into the ground thereby enriches it and makes it ready for the seed. Thus we have the cycle of natural laws maintained because nature is not interfered with by the art of man.

The same is true of roaming aborigines, who, depositing their dejecta on the ground, after the manner of the lower animals, leave all further handling of it to nature, who, as with that of the cow and the horse, utilizes and removes it to the best possible advantage. But when man came to live in aggregation, to form cities wherein multitudes are crowded into the least possible space, this natural, original method of disposing of excreta, was, of necessity, forced to give way to some artificial means. Pipes and sewers then became, we supposed, necessities. But, here we were flying in the face of nature, and she was not slow to resent it. The great outside atmosphere could have no access to the putrefying dejecta in our sewers, it was, therefore, not removed and utilized as nature intends that it should be, it accumulated until, requiring vent, it crawled back through the pipes into our houses, when chronic ill-health was the result. Then was the ingenuity of man called into play and numberless varieties of "traps" were invented, all designed to stay the deadly backward march of this fell, murderous gas. Still it came; then were the traps supplemented by all varieties of ventilating shafts; but even yet outraged nature was not appeased for the larceny of that which she required to give nourishment to vegetable life, and, being more powerful than art, she still contrived that some of this foul gas should find its way into the house to inflict misery upon those who unnaturally robbed her of that which naturally was hers.

This brings us to the situation of affairs as they exist to-day, when we are trying to dispose of our sewage in an artificial manner which is not satis-

factory for the simple reason that it is not in accordance with nature. Various have been the means suggested to remedy this faulty condition ; some more expensive than others, and all more or less unsatisfactory. The simplest method (as is so often the case) was the last to be thought of. It was finally reserved for the ingenuity of an American to ask himself the question "why can we not devise some means by which the excreta of aggregations of persons can be removed or handled just as that from the lower animals is treated by nature?" and the answer to this question has been the gradual perfection of a system of sewage disposal exactly in accordance with natural laws, a system so perfect that we truly believe nothing more is left to be desired. We believe that we now have a plan for the disposal of excreta, that is, in a word, perfect, one with which no fault can be found. Want of space compels us to postpone a description of this system until our next issue.

SUBSTITUTION.

One of the most crying evils of the day is the practice of "substitution," and it is a practice that calls for the active attention of every intelligent man and woman, because it is a practice extremely common and equally injurious to health. Adulteration is, in reality, substitution ; a conscienceless manufacturer in the former, and a rascally dealer in the latter case, seeking to increase his honest profits by making or selling an article that is not what he represents it to be, and while, in some instances, it may be that the fraud which he perpetrates is negative so far as its effects upon the

health of the consumer is concerned, yet, in very many cases his crime is magnified and intensified because of the evil effects upon health that his "substitution" will entail.

The substitution of an inferior article for one, which because of general recognition of its merits, has the ability to command a price in which there is a fair margin of profit, and by which act the dealer's profit is increased, is a daily occurrence, so common indeed that it has almost come to be recognized as a reality, beyond the realm of remedy and excites but little comment. It is only when some glaring instance of substitution is brought to light that we are made to realize the iniquity of the practice.

Such an instance, recently brought to light in this city, has been the incentive to these remarks. All of our readers are familiar with "Mellin's Food." Starting out with the possession of a good article, a food possessing great merit, the manufacturer's have, by energetic and judicious business methods succeeded in making "Mellin's Food" a household phrase, and building up a demand for this food that reaches into every quarter of the globe. Well, in this fact, a base scoundrel (we can conscientiously use no milder word) in this city, saw the opportunity for fraudulent profit. Putting up a preparation, which not only was a fraud, but was also a *dangerous* fraud, this miserable wretch sold his vile and deleterious mixture under the name of Mellin's Food," using the style of bottle, trade mark and label that the original and genuine article carries with it. *We are glad to say that this man is in jail* and we want to give extensive publicity to this fact as a salutary warning to

others who might be tempted to walk in his evil footsteps.

We have nothing to do with the business of the manufacturer's of Mellin's Food," hence we do not dilate upon the damage to the manufacturer that such fraud must entail; but we do have to do, in a most special manner with the health of the people and it is from this standpoint that we regard the evil of substitution, and it is because of the very insidiousness of the danger and damage caused thereby that we feel that we cannot say too much on the subject. We have selected this particular case, because of the great reputation of the article in question, to point our remarks on the condemnation of the almost universal practice of substitution.

WORTHY EXAMPLES SET BY WORTHY MEN, AND A WOMAN.

In our last issue we asked our good friends to kindly help us in our work of spreading a knowledge of hygiene, by inducing some of their friends to become subscribers to "THE ANNALS." Since then we have received from Dr. F. C. Bowman, of Duluth, Minn., an order for twenty-five copies for one year, to be sent at his expense to twenty-five of his patients; from Dr. M. H. Lincoln, of Natrona, Pa., four subscriptions; from Mr. C. R. Woodling, of Berwick, Pa., two subscriptions, from Mrs. Dr. E. G. Cook, of New York, one; and from an anonymous friend one. We thank these good friends and hope these philanthropic examples will be numerous followed.

OUR FEBRUARY ISSUE.

By a mistake of our mailing clerk, a number of our subscribers have

received two copies of the last issue, that for February 1889. This leaves us short of this number at the office, and we would ask those who received duplicates if they will not kindly return us the extra number. A one cent stamp will carry the Journal, and we will cheerfully remit this amount to those who thus kindly oblige us.

THE WORK OF OUR BOARD.

Owing to the illness of our Secretary, we must postpone, until our next issue, the promised summary of the work of our Board. Since the work of the Board is, in reality, the work of its ever-active and indefatigable Secretary, it has seemed to us that no one could adequately substitute him in the preparation of this summary.

INDEX FOR 1888.

The Title Page and Index for Volume III, (1888,) is now ready and will be mailed to any one who may want to have the last volume bound.

THE BURNING OF GARBAGE IN THE KITCHEN STOVE.—Referring to the disposal of decomposable and waste materials from the residence, and the preservation of the purity of streams and lakes, and the prevention of the spread of disease, Dr. Lyster recently offered the following resolution which was adopted by the Michigan State Board of Health.

Resolved, That the waste material from the kitchen and dining room can in a large majority of cases be most economically and safely disposed of by consuming it in the kitchen stove; that this method of disposal will prevent the necessity for a barrel for the temporary storage of garbage, and regular removal of the same.

NOTES AND COMMENTS.

TWO STRANGELY MORTAL AGES.

GREAT MEN WHO HAVE DIED AT FIFTY-TWO AND FIFTY-SIX.

At the age of Fifty-two.

	BORN.	DIED.
Bonaparte, Napoleon, Na- poleon I	A. D. 1769	1821
Emanuel the Great, King of Portugal	A. D. 1469	1521
Flaminis, Italian Latin Poet	A. D. 1498	1550
Frederick William I, Father of Frederick the Great .	A. D. 1688	1740
Hezekiah, King of Judah .	B. C. 750	698
Henry II, Emperor of Ger- many.	A. D. 972	1024
Otho I, King of Greece .	A. D. 1815	1867
Peyton, Randolph, Presi- dent First American Con- gress	A. D. 1723	1775
Quarles, Francis, English Poet	A. D. 1592	1644
Sallust, Roman Historian .	B. C. 86	34
Shakespeare, William, Dra- matist	A. D. 1564	1616
Smith, Captain John, Founder of Va.	A. D. 1579	1631
Thackeray, William Make- peace, English Novelist .	A. D. 1811	1863
Utrecht, Adrian von, Dutch Painter.	A. D. 1599	1651
Wright, Silas, American Statesman	A. D. 1795	1847
William III, Prince of Or- ange	A. D. 1650	1702

At the age of Fifty-six.

Cæsar, Caius Julius, Roman General.	B. C. 100	44
Capet, Hugh, King of France	A. D. 940?	996
Claudius II, Marcus Aure- lius, Emperor of Rome .	A. D. 214	270
Dante, Degli Alighieri, Ital- ian Poet	A. D. 1265	1321
Frederick I, First King of Prussia	A. D. 1657	1713
Frederick II, Emperor of Germany and King of Naples and Sicily . . .	A. D. 1194	1250
Hancock, John, American Statesman	A. D. 1737	1793
Helvetius, French Philoso- pher and Author	A. D. 1715	1771
Henry II, First of the Plan- tagenet Line	A. D. 1133	1189
Henry VIII, King of Eng- land	A. D. 1491	1547
Henry IV, Emperor of Ger- many.	A. D. 1050	1106
Kingsley, Rev. Chas., Eng- lish Author.	A. D. 1819	1875

Knox, Henry, American Revolutionary General .	A. D. 1750	1806
Leicester, Robert Dudley, Earl of, Favorite of Queen Elizabeth.	A. D. 1532?	1588
Lincoln, Abraham, Presi- dent of the United States	A. D. 1809	1865
Maria Louisa, Empress of France	A. D. 1791	1847
Marryat, Frederick, Eng- lish Naval Officer and Novelist	A. D. 1792	1848
Massinger, Philip, English Dramatist.	A. D. 1584	1640
Mifflin, Thomas, American Patriot and General . .	A. D. 1744	1800
O'Meara, Barry Edward, Irish Surgeon in St. He- lena	A. D. 1780	1836
Paganini, Nicols, Italian Violinist	A. D. 1784	1840
Pliny, the Elder, Roman Naturalist and Author .	A. D. 23	79
Pope, Alexander, English Poet	A. D. 1688	1744
Prim, Juan, Spanish Gener- al and Statesman	A. D. 1814	1870
Saladin, Sultan of Egypt and Syria.	A. D. 1137	1193
Sale, George, English Ori- entalist.	A. D. 1680	1836
Scipio Aemilianus Afri- canus Minor, Roman General.	B. C. 185?	129
Spurzheim, Johann Gaspar, German Physician and Phrenologist	A. D. 1776	1832
Stephenson, Robert, Eng- lish Engineer.	A. D. 1803	1859
Troup, von, Maarten Har- pertzoon, Dutch Admiral	A. D. 1597	1653
Whitefield, George, Eng- lish Founder of Calvin- istic Methodism.	A. D. 1714	1770

—*Phila. Press.*

THE CHAMBERMAID CURE.—The Queen of Sweden is undergoing a peculiar, though rational, treatment to restore her nerves to a normal condition. Her doctors have ordered her to rise early, make her own bed, and dust and sweep the room. She has to take a walk in the garden before breakfast, work among the flowers afterwards, and lead an active outdoor existence all day long. Already the Queen has been benefited by this curious cure, the "chambermaid treatment" as it is called.

HOW THE SMART GIRL TRAINS TO KEEP HER BEAUTY.—“Babb” in the *Philad’a Times* says, It is a curious thing that in society so few old women, that is, old women of the old time, are seen. We hear that a cotillion was led by Mrs. So-and-So, who looked exceedingly handsome, and it suddenly dawns on us that we read last week about the third daughter of Mrs. So-and-So being introduced at an afternoon tea. Whether the society woman of the day has learned the wisdom of Ninon de l’Enclos or discovered how Cleopatra could keep her age from withering her, nobody is quite sure, but it is very certain that many of the women with grown daughters are handsomer and almost as young looking as the pretty buds. Now how is this done? How do they keep the skin of a thoroughbred glossy, her eyes bright and her step dainty? By never overlooking the value of steady, persistent grooming. By never forgetting the value of rest and exercise in their proper places and of studying just what is best suited for the animal to eat and what should never form part of the daily menu. The woman who goes in for society is as industriously cared for as if she were a fine racer. Here is her routine: About 9 o’clock in the morning there is brought up to her a bit of thin dry toast, accompanied by a cup of tea or coffee, as she best likes. This is taken in bed, and by the time she is through with it and has rested a few minutes it is about 10. Up she gets, puts on a warm bath robe and funny Chinese slippers; into the bath-room she goes, to find there a hot bath waiting her. Hot, you say? Yes; so hot that her foot is put in many times before the final plunge is made. She is not afraid

of plenty of soap, and she rests under that hot sea until her skin feels as if it had been remade, it is so soft and velvety. Up she gets, and her maid arranges the shower bath. An oil-skin cap is over her head and the stream of water that comes down upon it is at first just the temperature of her bath, but grows colder and colder until it is so very cold that it brings all the blood to the surface and she looks like the typical boiled lobster. Then the maid begins to rub her with a big soft towel; she returns to her bed and is softly rubbed again with alcohol, so that there is no danger of that most troublesome and ugly of illnesses, a cold being contracted. After this mademoiselle is dressed, looks over her letters, discusses with mamma and Abigail what she will wear during the day and just what her engagements are. At 1 o’clock the brougham comes to take her to a luncheon. Three o’clock finds her bidding the hostess good-bye; she has eaten some bird, a salad, and a trifle of sweet. Back to the house she drives to get mamma. They depart, pay a round of visits, stopping not longer than ten minutes in any one place, and reach home at half-past five. Mademoiselle then goes to her room, has her walking costume changed for a fetching tea gown, freshens her face, has her hair rearranged and in a few minutes is in the drawing room receiving the men who drop in to have a cup of tea and appreciate two charming women. At half-past six comes a nap. This lasts until seven o’clock and then her toilet is made for dinner. At the table she is careful to refrain from heavy-made dishes. After dinner there may come the theatre, opera, a cotillion or a rollicking Sir Roger de Coverly. No

matter what time mademoiselle reaches her room, however, the guardian of good looks is there to give her a cup of strong beef tea just before her head is put on the pillow and she goes to seek in the land of dreams that which is most delightful to her. She has learned to play tennis, to bowl and to wield the billiard cue wonderfully well, for she realizes that each exercise will tend to develop her arms and keep her in good health. She knows that a little sweet is most desirable, for it makes her plump; that many sweets are dangerous things, and that if she wants to be as handsome as mamma is at her age she must observe rigorously the rules of good living, which are, after all, those of healthful living. She also knows that the best cosmetic she can possibly use is hot water, and she realizes the value of her bath and laughs to scorn the idea of anything to be gained from the cold tub. I have always maintained that generally men were cleaner than women, and I think tradition will carry me out. Men wash because they like to feel clean; women because if they are not clean they won't be good looking. The next generation ought to be a very handsome one, for as cleanliness is a fashionable fad, it will tend to make women handsomer and naturally their children will inherit it.

CORPOREAL PUNISHMENT AT SCHOOL.

—A writer in *London Queen* says: "The question as to the proper mode of inflicting corporeal punishment is one that has been strongly debated. There is no doubt that it should never be placed in the power of pupil or assistant teachers; the head master or mistress should alone have the power to punish. The question that has

been raised as to whether girls should be exempt from it is, to say the least, childish. Those who know anything of the working of ordinary schools are well acquainted with the fact that, when girls are prone to be troublesome, they are infinitely more difficult to deal with than boys, and that there are always in every large school some few who are amenable to no other discipline. They must either be dismissed, to their inevitable ruin, or they must be allowed to remain and practice their wilful disobedience, to the destruction of the discipline of the school and the corruption of the other pupils. To say that such girls should not be subjected to the only treatment that can avail for their reformation is simply part and parcel of the maudlin innane sympathy with the wrong-doer that is characteristic of a small section of people at the present time. Much outcry has been made against the degrading effect of corporeal punishment. As often inflicted, the outcry is not without cause; but that a boy or girl can be degraded or injured by being caned across the shoulders is a fiction. All impulsive punitive acts should be interdicted. Boxing the ears is a most injurious mode of punishment; it often causes severe and permanent injury to the brain. Striking the hands with a cane, much more with a hard wooden pointer, is objectionable, as being liable to injure severely the tendinous tissues and numerous joints of the wrist and hand, but birching across the shoulders where the broad, flat bones and ribs are good bulwarks protecting the vital parts, is a power that should be intrusted to every head teacher in every school. A power to be most rarely used, but always to be held as a Nemesis that is

ready to overtake the evildoers. It may be said that such sentiments are unnatural and not in accord with the highest philosophy, but to take example from nature, pain is to be regarded as an institution ordered by a higher than human intelligence that prevents us from injuring our own bodies and so tends to our preservation. There is no law, human or divine, that prevents our utilizing it for the benefit of our children."

DIRT AND DISEASE.—*The Monthly Bulletin of the Iowa State Board of Health* says that one of the inconveniences, as well as dangers, of Winter, is the lack, or seeming lack, of proper facilities for body-bathing and cleanliness. If possible, bathing is more imperiously demanded in Winter than in Summer. The relaxation of the tissues, and the perspiration produced by even slight exertion in the Summer, obviate in a measure, the necessity for frequent bathing, the removal of the perspiration being then a luxury as well as a necessity. In Winter, however, perspiration is almost insensible, the cold contracts the skin, and has a tendency to lock up the cutaneous excretions, and the want of facilities for bathing result in the retention within the body, of effete substances that poison the blood and lower the vitality. There are few, however, so poor, and few houses so ill-constructed, that the whole surface of the body cannot at least once a week be entirely cleansed. But few have any idea of the fearful epidemics that have followed in the wake of uncleanly habits. There is a Church tradition, though it is hoped there is no truth in it, that St. James never took a bath. A biographer of St. Anthony says that "up to

extreme age he never even washed his feet." No wonder, and no compliment, that Erysipelas, a filthy disease, is called St. Anthony's Fire. A recent writer says "the fourth century was the religious apotheosis of dirt, not because the hermits and Church had any quarrel with clean skins, but because of the *sensuous* delight (they must mortify the flesh) and comfort of bathing in hot climates. Let us note the results. Millions of the human family were carried off by the plague, black death, and other awful epidemics. Between 1333 and 1348, 45,000,000 of people were said to have been destroyed by the black death alone. Sanitary science, then, as now, a branch of medicine, came to the relief of the people. Its precepts and teachings regarding the dangers of filth and the blessings of cleanliness, were the blessed evangel of a better health, and it is safe to predict that such epidemics can never occur again. The most dreaded of all our epidemics of to-day, and one insignificant as compared with those referred to, Cholera, can be practically annihilated by proper *sanitary* measures—especially a modification of the filthy practices of the pilgrims at Mecca, and on the Ganges. The practical lesson then, is not simply to wash and be clean, all of which is very sensible, but wash and be "well."

TOO MUCH EDUCATION.—Shirley Dare thus eloquently writes in the *Philadelphia Press*: "If you could see the end from the beginning, education in mere book learning would not be valued higher than life and health and social adaptation, as it is held. Since I wrote the last paper in this series I stood by the deathbed of one of the most finely-gifted women in brain, beauty,

delicate, enduring physique and personal character to be found among women. Some of the best blood in England flowed in her veins. Better still, the blood of heroes and lordly spirits who laid down their heads for country and freedom, and she was a worthy descendant of such men. For more than twenty years life had been one almost unbroken anguish of such pain as seems incredible. Her doctors—such men as Seguin and Hamilton, specialists in nervous diseases—said it was the pain of cancer without its hope of speedy release. Borne bravely, heroically, silently through those long years, she never excused herself one duty the trembling hands were able to perform, but with corpse-like face, pausing for the intervals of maddening pain, went about her household tasks till mind and body both gave way, at the very last. And this terrible doom was traced to her education.

The bright girl, overpressed with studies to gratify the pride of her family, broke down with brain fever at 14, recovered only to be urged along the same route, with Latin, Greek, higher mathematics, belles lettres, besides accomplishments, all taken not in smattering, but with the thoroughness and conscience which marked all she did. From graduation she went at once as teacher in a large and brilliant ladies' school, and, worn out there in a few years, wishing rest and a home of her own, she married—God helper!—a home missionary, the last man in the world she should have chosen. Hard duty and care followed, till there came an awful respite from her toil, who had known no rest without it—endless seeming years of such agony as wrings the heart to think of. And the seed was sown in that ambitious

over-schooling of a delicate girl years before. By her dead form I swore that such force as I have should go to prevent women from suffering such cruel lives, if plain speech and truth-telling could hinder them."

HEALTH AND WEALTH.—Mr. Henry George, the noted political economist and lecturer, gave a very interesting address upon "Poverty and its Causes," in this city a few days since, (says the *Monthly Bulletin of the Iowa State Board of Health*). His theories as to the cause and cure of poverty are well-known, and are heartily endorsed by many. We believe he did not emphasize, if indeed he alluded to, the potent agency of sickness in the production and maintainance of poverty. In this land of comparative plenty, and of good wages, there need be no poverty among the healthy. A man who is in good health, and whose family is similarly fortunate, whatever theory of taxation prevails, can keep his family in comfortable clothing and healthy food, and purchase for them a good many luxuries. Should he however be sick, or any of his family dangerously so, work and wages not only cease, but there are super-added medical attendance, medicine, nurses, and the many items incidental to sickness and sepulture. The State Board of Medical Examiners of Iowa has issued certificates to practice medicine to 3,283 physicians. Deducting deaths and removals, at least 3,000 persons practice medicine in the State. If they receive each \$1,000, a low estimate, the amount paid for medical attendance reaches the enormous sum of \$3,000,000! This does not include loss of wages, medicine, extra lights and fuel, and the costs of burial. To place our

wasted resources on account of sickness, and its consequent expenses, at \$10,000,000 is a very moderate estimate! The trouble is, that we regard sickness as a dispensation of Providence, and hence inevitable, and we do our best to school ourselves to submission to ways that are inscrutable. If the pulpit, as well as the press, were to use their best endeavors to teach the people that sickness, in the large majority of cases, was sinful rather than providential, there would be less poverty and suffering. We close by stating that Mr. George and all labor reformers and political economists, fail greatly when they do not emphasize the importance of sickness as a factor in the production of poverty. "PUBLIC HEALTH IS INDEED PUBLIC WEALTH."

HOW DOCTORS ARE VIEWED BY A GOOD-NATURED LITERARY MAN.—The doctor who could not laugh and make me laugh I should put down for a half-educated man. It is one of the duties of the profession to hunt for the material of a joke on every corner. Most of them have so esteemed it. Garthe, Rabelais, Abernethy and a hundred or so more too near to be named, what genial, liver-shaking heart-quickenings, wit-wakening worthies they were and are! To the son who loves her best Nature reveals most her tricks of workmanship. He knows there is a prize in every package of commonplace and sadness, and he can find it—not only the bit of fun shining to the eye of the *connoisseur* like an unset jewel, but the eccentricity, the resemblance, the revelation, countless signs and tokens of the evanescent, amusing, pathetic creature we call the human. Heartless, grasping, irreverent? The deepest com-

passion for human ills, the broadest generosity to human needs, the highest respect for all that is strong and pure and holy in human lives, I have seen in the men who come closest to the mystery of life and the mystery of death, who read the naked heart when it is too weak or too sorrowful to hide its nakedness, who know our worst, and are most of them wise enough to strike the balance. If they are cynics it is we who have made them so. We are the books out of which they learn their lessons.—*Mr. A. B. Ward in Scribner's Magazine.*

WHY WOMEN GET SHORT OF BREATH.—In order to ascertain the influence of tight clothing upon the action of the heart during exercise, says Dr. Sargent in *Scribner's Magazine*, a dozen young women consented last summer to run 540 yards in their loose gymnasium garments, and then to run the same distance with corsets on. The running time was two minutes and thirty seconds for each person at each trial, and in order that there should be no cardiac excitement or depression following the first test, the second trial was made the following day. Before beginning the running the average heart impulse was eighty-four beats to the minute; after running the above-named distance the heart impulse was 152 beats to the minute, the average natural waist girth being twenty-five inches. The next day corsets were worn during the exercise, and the average girth of waist was reduced to twenty-four inches. The same distance was run in the same time by all, and immediately afterward the average heart impulse was found to be 168 beats per minute. When I state that I should

feel myself justified in advising an athlete not to enter a running or rowing race whose heart impulse was 160 beats per minute after a little exercise, even though there were not the slightest evidence of disease, one can form some idea of the wear and tear on this important organ, and the physiological loss entailed upon the system in women who force it to labor for over half their lives under such a disadvantage as the tight corset imposes.

TEN GOOD THINGS TO KNOW.—

1. That salt will curdle new milk; hence in preparing milk porridge, gravies, etc., the salt should not be added until the dish is prepared.

2. That clear boiling water will remove tea stains and many fruit stains. Pour the water through the stain and thus prevent it spreading over the fabric.

3. That ripe tomatoes will remove ink and other stains from white cloth; also from the hands.

4. That a tablespoonful of turpentine boiled with white clothes will aid in the whitening process.

5. That boiled starch is much improved by the addition of a little sperm salt or gum arabic dissolved.

6. That beeswax and salt will make rusty flat-irons as clean and smooth as glass. Tie a lump of wax in a rag and keep it for that purpose. When the irons are hot, rub them first with the wax rag, then scour with a paper or cloth sprinkled with salt.

7. That blue ointment and kerosene mixed in equal proportions and applied to the bedsteads is an unfailing bedbug remedy, as a coat of whitewash is for the walls of a log-house.

8. That kerosene will soften boots or shoes that have been hardened by

water, and render them as pliable as new.

9. That kerosene will make tin tea-kettles as bright as new. Saturate a woollen rag and rub with it. It will also remove stains from varnished furniture.

10. That cool rain-water and soda will remove machine grease from washable fabrics.

HOW TO TAKE A BATH.—It rather detracts from our Yankee reputation for ingenuity to see what a fuss some of our people make, when they proceed to take a bath. (Says a writer in *The Sanitary Inspector*.) If you want to bathe quickly and economically, do it as follows: Buy a piece of crash towelling and make a pair of bathing mittens by laying your hand upon the crash with the thumb extended, and cutting around it at a considerable distance, so as to leave a pretty wide margin for seams. Sew together two pieces thus cut out as a large and loose bathing mitten, making one for each hand. Take a quart or two of water in an ordinary bathing pan, or any ordinary flat bottomed pan, and standing in it, dip the bathing mittens into the water, and soaping them, go rapidly over the body, following the application of the soap with the application of water. With the bathing mittens made in this way one can take a bath in five minutes after he is ready, and it is not much work to get ready; much more quickly than when he tries to rub himself all over at once with a round ball of a sponge. The bath may be taken in any room without wetting or soiling the carpet.

With both hands to work with, and the whole flat palms, with thumbs extended, this little act of devotion to

personal hygiene, is quickly and efficiently accomplished. The writer once invested in some attractive bathing mittens displayed in London shop windows, but they had no thumbs, and provokingly slipped round and round when in use. The homemade are better.

THE LESSON OF RUDOLF'S DEATH.

—The King and the peasant are equally amenable to the laws of nature. The heritage of a crown does not make a man less liable to the inexorable mistress (nature) than is the veriest pauper. He who is born in a palace can not ignore the laws of nature with any more impunity than can any one else. As a rule the lives of royalty are anything but what they should be, and as a consequence we find the princely families of Europe but poor specimens of humanity from a physical point of view. Epilepsy, scrofula, insanity and a host of similar terrible maladies with which we are told that most of the royal families are, more or less afflicted, are not, as some would tell us, the result of inter-marriages, but are rather due to the vicious and unnatural lives followed by the so-called favorites of fortune. We know that an "Idle man's brain is the Devil's workshop," and we also know that scion's of royalty, idle, so to speak, from the necessities that surround them, and beset by the temptations incident to their exalted stations, furnish excellent pastures for the machinations of the arch-fiend. Whatever may be the true story of poor Rudolf's death; this much we know, his life was an unnatural one, and his death was a natural sequence. There are thousands such in this world every year, though it is but seldom that the exalted rank

of the victim serves to call our attention to the penalty of violating the laws of nature.

DEFEND YOURSELVES FROM TYPHOID FEVER.—Under this title says the *Med. Record*, Professor Carlo Ruata, of Perugia, gives a striking account of the prevalence of typhoid fever in Italy. Every year, he says, this disease attacks from two hundred thousand to three hundred thousand individuals, and causes a mortality of twenty-seven thousand seven hundred. One-third of the persons in Italy who reach the age of forty-five are attacked with typhoid fever. In several districts over three per cent. of the inhabitants die from the disease annually.

The extraordinary prevalence of typhoid fever in Italy can be better realized by a comparison with the rate in this country. Massachusetts, with a population of two millions, has annually less than one thousand deaths from typhoid fever. Italy, with a population fourteen times as great, has twenty-seven times more deaths from this disease.

It is inexcusable that civilized states at the present day should allow a disease relatively so controllable to make devastations such as those in Italy. Well may Professor Ruata exclaim, "Defend yourselves from typhoid fever!"

MONEY FOR STATE SANITATION.

—Illinois stands third in the list of States, when arranged in the order of the amounts appropriated for sanitary matters. Massachusetts leads with over \$100,000, Texas following with \$60,000, and Illinois coming to the front with a total of \$49,000, including the emergency fund.—*Sanitary News*.

RURAL HOMES.—Dr. Lucy M. Hall, of Brooklyn, in the course of a paper presented to the New York Academy of Anthropology, gives the following valuable statistics of 168 farm houses divided between the New England, Middle and Western States :

ficient oxidation of the blood existed, in spite of the daily out-door exercise of the patients. The absorption of oxygen in the daytime was more than offset by the lack of ventilation of the farmers' sleeping apartments, where they spend nearly a third of their lives

PERCENTAGES OF THE ONE HUNDRED AND SIXTY-EIGHT HOUSES UNDER SUNDRY CONDITIONS.

	N. ENGLAND.	M. STATES.	WESTERN
Erected on wet clay.	11	67	13
Too closely shaded	50	49	62
Bedrooms on ground floor.	100	99	84
Bedrooms unwarmed	72	24	19
Shut-up parlor and general darkness	35	68	60
Wet or damp cellars.	60	93	80
Wells in houses.	18	14	23
No vault or ventilating shaft.	72	14	39
Slops thrown from back door	77	40	26
Earth closets	55	14	19
Average distance of well from barn (feet).	46¾	117	118
Average distance of well from privy (feet).	22¾	33	66½
Prevalent diseases (per centage) :			
Rheumatism	70	81	80
Consumption and other lung complaints	93	76	65
Diphtheria	93	70	15
Typhoid Fever	55	9	27
Diarrhoeal diseases	50	33	4

Let us study these figures for a moment and see how instructive they are. We see that the average distance of the well from the privy is the least in the New England States, and we find that the percentage of typhoid fever is the greatest. We find that wet or damp cellars predominate in the Middle States, and there also do we find the greatest percentage of rheumatism. Finally, we find that in most all respects the farmhouses of New England are very insanitary, and, as we would expect, we also there find the percentage of diseases due to unhygienic conditions very great.

FARMERS' BEDROOMS. — Professor Victor C. Vaughan, in a recent address, referred to frequent cases among farmers in which indications of insuf-

in a vitiated atmosphere, the conditions being frequently such that the oxygen would be used up by the sleeper in the first hour of retirement, the rest of the time being spent in an atmosphere unfit for human respiration.

THE DANGER OF FALSE TEETH.—

As an Atlanta lady was dressing for a wedding the other evening she happened to break one of her front teeth off close to the root. She thought she'd try and stick it on with wax, and succeeded admirably, went to the wedding, and from the church to the reception, and forgot all about her broken tooth until she took a swallow of hot coffee, when, as the tooth went down with the coffee, she remembered the accident.

THE PREVENTION OF TYPHOID FEVER.—Dr. Augustus Caillé thus writes in the *New York Med. Jour.* “No sleeping apartment should have a wash-basin which communicates with drain-pipes and sewers. The occasional use of germicide solutions in waste-pipes is no safeguard against infection; it is far more advisable to place a large piece of crude potash into the sinks every week or two; the fatty and sticky coating on the interior of waste-pipes is thus dissolved and loosened up and is carried away by a flush of water. Such a procedure would work good results, especially in tenement houses. According to our present experience, infection through drinking water can be avoided by boiling the water before use. In the tenement house districts of New York city typhoid fever would have fewer victims if the physicians who attend a case would make it their business to ascertain that printed directions distributed by the Board of Health to prevent the spreading of contagious disease were actually read, understood, and obeyed. Many people are willing to carry out sanitary instructions if they are shown how; others neglect to do so because they do not quite understand written instruction, and no one has a better opportunity to make such matters clear than a conscientious attending physician. Clinical thermometers after use should be cleansed with a pledget of cotton and bichloride of mercury solution.”

CUSTOM BREEDS TOLERANCE.—We wish most earnestly that these words could be formed in letters of fire and deeply and everlastingly burned into the minds of every living man, woman and child. They constitute what

ought to be the obvious answer to those scoffers who doubt the efficacy of hygiene, using, to enforce their skepticism, the argument that so many persons live surrounded by filth and unhygienic conditions, yet filth diseases are not common among them. Even the great Koch seems to have fallen into this error, for he is reported to have said that filth is inimical to the development of the germ of cholera, basing his statement upon the fact that during the last cholera epidemic the scavengers of Toulon, Marseilles and Naples were remarkably exempt from the disease. It seems to us that one principal answer to these claims is that “Custom Breeds Tolerance.” Do we not know that by the gradual and increasing use of any poisonous agent (say opium, strychnia, etc.) a tolerance may be established so that what would ordinarily be a fatal dose will have no appreciable effect. Do we not know that the natives of Cuba are so “acclimated,” as they call it, that yellow fever has comparatively little terror for them. Why will not the same rule hold good elsewhere? Let one who is accustomed to live surrounded by good hygienic conditions move into one of these insanitary localities and see whether he will enjoy the immunity that is vouchsafed to the “acclimated natives.”

HEALTH AND STRENGTH IN THE GARDEN.—I have at least three personal acquaintances who owe much to old Dame Nature for renewed youth and new beauty of face and form gained by work in the garden, says a writer in *Vick's Magazine*. One is a woman of ample fortune, who loves her lawn, with its trees and vines and flowers as things of beauty. I doubt

if the thought of health occurs to her, but the effect is patent to all her friends. Another is a lovely little woman who has been in ill health for years. This season, moving to a new home where friends and acquaintances were scarce, sheer loneliness drove her to her garden. There the needs of the growing things appealed to her, and day by day her visits were repeated, until at last all her morning hours were spent among them, planting, training, weeding, thinning and digging. The result is a renewal of health and strength unknown before for years, and new happiness and greater contentment. The third is a good woman whose sorrows seemed piled mountain high through the loss by death within a few months of her husband and child and of property as well. Trained to no work as a girl she seemed helpless. But her little garden demanded attention, and her very losses compelled her to work with her hands. Here, too, the soothing balm of pure air, exercise and occupation worked its marvels in recovering health, contentment and a spirit of self-helpfulness.

A DISGRACEFUL JAIL.—In the last quarterly Report of the Illinois State Board of Health Dr. Rauch says: On the 14th of July I made an inspection of the Tazewell county jail, at Pekin, concerning which I subsequently wrote to the sheriff in unqualified condemnation of the structure. That portion of it in which the male prisoners are confined consists chiefly of a room 27x28 feet, and 8½ feet high; this is divided by heavy iron bars into eight cells and, with its stone floor resting directly upon the ground, resembles a cage for wild beasts rather than anything designed for human occupancy. The

only ventilation is by three apertures, 27x30 inches, fully one-third of the space obstructed by heavy iron work. These apertures are situated in the upper part of the wall, thus still further reducing their ventilating value, which is only nominally aided by two so-called air-shafts. Openings through the stone flagging in corners of the room communicate directly with shallow holes in the ground which constitute the only cloacæ. To empty these it is necessary to tear away the outside wall and then rebuild. The result may be imagined, but not described. Diarrhœas and low continued fevers prevail among the prisoners confined in this damp, noisome stone dungeon. If this jail is the result of a studied effort to outrage every law of health, humanity and decency, the effort is a disgraceful success.

CLEAN THERMOMETERS.—As a means of establishing cordial relations between physician and surgeon it is a good plan to call for a napkin or a towel, the corner of which has been dipped in clean water, for the purpose of cleaning the thermometer when it has been used in the mouth. The patient then has the best evidence that it has been subjected to a similar process when used upon the preceding patient, and does not fight shy of having it inserted under his tongue.

PENALTY FOR HANDLING INFECTED CLOTHING.—The magistrates of Bootle England, have recently fined two persons for removing infected clothing. In one case a man removed infected articles from the house in which his child had died of scarlet fever; in the other a poor woman pawned a quilt to buy food for her sick son.

THE HAPPIEST OF NATIONS.—It has been said that the happiest nation is that in which the proportion of men and women is most nearly equal, in which the number of illegitimate births is least, which contains the greatest number of healthy adults, in which the average life is longest, and in which the proportion of people beyond sixty years of age is the highest. According to the *Paris Temps*, France is the country in which all these conditions are most fully met. While in Great Britain there are 750,000, and in Germany 1,000,000 more women than men, in France the excess is only 92,000. Between the years 1825 and 1867 the illegitimate births varied in the different countries of the continent from 8.2 to 25 per cent., but in France they were only 7.2 per cent. The mortality in England is 31, in Germany 38, and in France 23.8. The proportion of inhabitants between fifteen and sixty years of age is greater in France than in any other country, and the same favorable showing is made for the average duration of life and for the number of vigorous old people. Nevertheless the population of the country is stationary, or even decreasing, and this in spite of the fact that emigration is small as compared with that from other countries.

DANGER IN THE POSTAGE STAMP.—

The *Sanitary News* calls attention to the fact that a postage stamp may in various ways convey contagion. One of the simplest and most plausible is that in which a postage stamp, partially attached to a letter to pay return postage, is sent by a person infected with some disease to another person. The disease is transferred in the first place to the adhesive stamp through

the saliva, and in being attached to the letter by the receiver the poison may be transmitted to him in turn through saliva. Another cause may be the infection of the stamp with disease germs. The stamp, having been exposed in a room where a diseased person lies, may become slightly moistened and thus retain the germ. That this is true can be proved very simply by a microscopical examination. We often see a person holding change for a moment in the mouth, probably not knowing that investigation has shown that disease germs can be carried by money. If one could see through what hands the money has passed they would hesitate before using a third hand. Silver money is as bad as paper money, but while many would hesitate to hold a dirty bank-note in their mouth, they think that a silver piece, because bright, is apparently clean.

RULES FOR FAT PEOPLE AND FOR LEAN.—To increase the weight: Eat to the extent of satisfying a natural appetite, of fat meats, butter, cream, milk, cocoa, chocolate, bread, potatoes, peas, parsnips, carrots, beets, farinaceous foods, as Indian corn, rice, tapioca, sago, corn-starch, pastry, custards, oatmeal, and sugar. Avoid acids. Exercise as little as possible; sleep all you can, and don't worry or fret.

To reduce the weight: Eat to the extent of satisfying a natural appetite, of lean meat, poultry, game, eggs, milk moderately, green vegetables, turnips, succulent, fruits, tea or coffee. Drink lime-juice, lemonade, and acid drinks. Avoid fat, butter, cream, sugar, pastry, rice, sago, tapioca, corn-starch, potatoes, carrots, beets, parsnips, and sweet wines. Exercise freely.—*Kansas City Medical Index*.

HOW AN EPIDEMIC OF SCARLET FEVER WAS PREVENTED.—The following facts, (says *The Sanitary Volunteer*) which occurred last month in one of the larger towns in the State, (New Hampshire) show conclusively how the spread of scarlet fever may be restricted by a determined health officer. Scarlet-fever appeared in a family living in a community in which there were nearly fifty children in the immediate vicinity of the infected family. The children of this family were at once taken from the school they were attending, and another member or two who labored in a factory requested to stay at home during the continuance of the disease. The head of the family was rebellious, and declared he would not submit to such regulations. The health officer closed up the rear entrance to the house, and stationed a man at the front door, or near by, to see that the quarantine ordered was properly maintained. A physician was furnished who did his duty. The children, after a severe illness, recovered, the premises were disinfected, the quarantine raised, and the disease stamped out without another case.

SPANISH QUARANTINE RESTRICTIONS.—*Canary Islands*.—The Minister of Spain informs the Secretary of State, under date of December 17, 1888, that the Spanish Government has ordered that "all vessels coming from the Canary Islands, except those coming from the Island of Santa Cruz de la Palma (which is 150 nautical miles from the nearest island of the aforesaid group), shall be admitted to free intercourse with Spanish ports. The Government of Spain has taken all necessary measures of isolation in the rest of the Canary Archipelago,

and has declared none but the aforesaid island of Santa Cruz to be infected. The undersigned, consequently, in pursuance of the instructions of his government, hastens to inform that of the United States that American vessels may, without the slightest danger, enter the ports of the Canary Islands, excepting those of Santa Cruz de la Palma. This information is furnished with a view to preventing the injury that would otherwise accrue to merchant vessels and to commerce in general.—*Weekly Abstract of Sanitary Reports*, Jan. 4, 1889.

CONSUMPTION AMONG INDIANS.—Consumption among Indians, according to statistical evidence, increases under the influence of civilization—*i. e.*, under the compulsory endeavor to accustom themselves to the food and habits of an alien race. Dr. Matthews thinks that climate has very little to do with this increase, since the Indian race invariably suffers more than either the white or colored race. He is inclined to regard the disease as scrofulous in origin, and arising from improper and badly cooked food, bad dwellings and poor clothing.—*Sanitary News*.

THE HEREDITY OF THE MORPHINE HABIT.—Erlenmeyer says that children born of women addicted to the morphine habit are practically morphine-eaters at birth. During the first few days of life, unless morphine is given to them, they are very apt to suffer collapse, and this condition may end in death, the child being too weak to withstand the violent symptoms which are similar to those which follow the sudden withdrawal of the drug in adult opium *habitués*.

WHAT CONSTITUTES HAPPINESS?

What is it that most makes man happy here below! Carnot, the grandfather of the French President, defined the elements of happiness under ten heads, which may be compared with the list compiled by Count Tolstoi:

CARNOT.	TOLSTOI.
1. Health.	1. Natural life in the open air with intimate connection with earth, its plants and animals.
2. An independent condition.	2. Physical labor, bringing good appetite and sleep.
3. A taste for work.	3. Simple affectionate family life.
4. The esteem of people of worth.	4. Free and familiar intercourse with your fellow men.
5. Love of society.	5. Health and a natural painless death.
6. Talent.	
7. A knowledge of business.	
8. Moderation.	
9. A tendency to aid the unfortunate.	
10. Companionship of an amiable woman.	

The lists are curious and suggestive. Most men can have all Tolstoi's ingredients. Some of Carnot's are unattainable for all but the gifted and wealthy, while hardly any of either can be attained by one who has not good health. Hence good health is in reality the foundation of all human happiness.

SUNSHINE IN THE HOUSE.—Let the sunshine into every room in the house, says the *Sanitary Volunteer*, make it a welcome visitor to the kitchen, dining-room, sitting-room, parlor, bedrooms—everywhere. It carries with it health and vigor and radiance and good cheer. It is a purifier. It wards off moisture, and mildew, and gloom, and disease. Let the warm rays of the sun embrace the children, strengthen the adults, and rejuvenate the aged. How often is the life-giving sunshine refused admission lest its healthful beams should fade some color in the filth-laden carpet! How often is disease invited into the shaded and sun-

less room to await its victim! There is a healthful efficacy in sunshine that cannot be elsewhere obtained: neither is there a substitute for it. Its effect is physical, mental, moral. Give your rooms and yourself a daily sun-bath. It is as necessary to human life as to the delicate house-plant. Roll up the curtains and open the blinds daily, that this great vivifying and protecting agency may bring its offering of health and happiness to your home.

GOVERNOR BEAVER ON "OUR BOARD."—We heartily thank Governor Beaver for the following kind remarks in his recent message to the legislature of Pennsylvania:

"The annual report of the Board of Health will give you detailed information as to the work performed by it. It has done much, in various ways, in ascertaining and pointing out the sources of epidemic disease, and has shown wisdom and discretion in dealing with cases brought to its attention. It has done good work, and is capable of being still more useful, *if its authority were extended and its power increased*. Its work is, in the very nature of it, very largely preventive, but is none the less valuable on that account."

The italics are ours.—[ED.]

ICE-CREAM POISONING.—Dr. C. N. Jones sends to an exchange an account of the poisoning of a social party by ice cream. In seeking for an explanation of the occurrence he found that the freezer was made of tin and was soldered on the inside. To cause the solder to adhere to the tin the tin-smith used zinc and muriatic acid. The writer asks whether the presence of the acid and zinc may not be the cause of poisoning in many cases of this nature, especially where particular care has not been taken to thoroughly rinse out the freezer with hot water before using.

VERDI'S WAY IN VACATION TIME.—The *Pall Mall Gazette* tells us that Verdi lately arrived at Montecatini, where he intended taking the waters, and with them a well-earned holiday. When arriving at the hotel where a suite of rooms had been prepared for him he found the chief piece of furniture in his drawing-room was a splendid piano. Without saying a word, the composer took the music of his "Trovatore," which had been put on the music stand as a gentle ovation, locked the piano, and said to the son of the hotel-keeper: "Take me to the place whence I can see the deepest abyss." The young man, somewhat abashed at the proposal, made in solemn tones, led Verdi to the top of Marienberg, whence the latter, who was so tired that he was hardly able to stand, hurled the key into the depths, saying: "The Virgin be praised! now I have accomplished an act which will greatly help me to enjoy and benefit by my stay. On the day of my departure from here I will see that the key is replaced." Holiday-seekers, go and do likewise, leaving behind you the keys of whatever workshops ye come from.

DIET FOR THE GOUTY.—Gouty patients may eat all kinds of meat, especially white meats. Use in moderation, eggs, fish, mollusks, crustaceans, and fatty foods. Vegetables should constitute a large part of their diet, excepting gooseberries and spinach, which contain large proportions of oxalic acid. Use with care, nourishing nitrogenous vegetables, such as cabbage and cauliflower; starchy grains, such as peas, beans and lentils. For bread, potatoes should be substituted. Fruits are all admissible,

and raisins may mitigate the condition of the feet. As a beverage, water, and particularly water which is slightly alkaline, to dilute light Bordeaux wines and slightly alcoholic white wines. No champagne, gaseous water, strong beer, or alcoholic beverages are allowed. Coffee should be drunk very weak. No tea is allowed, as it contains a large proportion of oxalic acid. The bowels should be kept in proper condition by the use of mineral purgatives. The stomach should be emptied every two hours. Lotions of the body, massage, and exercise in all forms are advised.—*Dujardin-Beaumetz in Revue Internationale des Sciences Médicales.*

ROYAL NERVES.—"Nerves," says an exchange, is the trouble of the Queen of Sweden, the Empress of Austria and ex-Empress Eugenie. The royal Swedish lady has to lead a most unqueenly life, earning literally every mouthful she eats by the sweat of her brow. Dr. Metzger, the eminent European specialist on the disease, has brought her to realize that without hard muscular work there must be no indulgence in the good things which her chef provides for her table, and that it is better to establish a nervous balance by digging and weeding or scrubbing like a housemaid than by exercise in a gymnasium. Dr. Metzger says that if girls would only understand the laws of health none of them would care to be fine ladies. His verdict on the Empress Eugenie is that she rode too often in easily hung carriages, and on the Empress of Austria that she has spent too much of her life in the side saddle. Women ought to vary their exercises and in a way to always both fatigue and interest.

CARE OF THE HAIR.—The best dressing for hair that lacks natural moisture (says *The Sanitary Era*) is diluted glycerine (fully half water) scented if so preferred, and with perhaps a grain to the pint, of salicylic acid or other mild antiseptic, to prevent fermentation where the hair is closely confined, or is not often washed. The advantage of glycerine dressing is that, while it cannot entirely evaporate, but continues to give a soft consistency to the locks, it is not greasy, but is on the contrary itself the best of cleansers, easily wiped off or rinsed out. The slight viscosity of the mixture is sufficient to engage all dust, dandruff or other impurities in the hair or scalp, and its extreme solubility causes it to rinse out completely when the hair is dipped in water, bringing all impurities with it. Simple water will rinse the hair brush or comb perfectly clean, where this dressing is used. Hair that is alternately rinsed and dressed in this way every day, will be always soft and clean as silk. The penalty of overdoing the glycerine is, of course, stickiness.

EDUCATING THE MEMORY.—Dr. William A. Hammond, the world-renowned specialist in mind diseases, says: "I am familiar with the various systems for improving the memory, including among others those of Fein-aigle, Gouraud and Dr. Pick, and I have recently become acquainted with the system in all its details and applications taught by Prof. Loissette. I am therefore enabled to state that his is, in all its essential features, entirely original; that its principles and methods are different from all others, and that it presents no material analogies to that of any other system. I con-

sider Prof. Loissette's system to be a new departure in the education of the memory and attention, and of very great value; that it being a systematic body of principles and methods, it should be studied as an entirety, to be understood and appreciated; that a correct view of it cannot be obtained by examining isolated passages of it."

IS TYPHOID FEVER SPREAD BY ANIMALS?—Dr. Kellogg recently called the attention of the Michigan State Board of Health to the conflict of opinion existing as to whether typhoid fever is communicable from men to animals and from animals to men. No attention is given to the drinking water of animals. Wells and polluted streams which human beings will not use are considered good enough for cattle. If typhoid fever may be communicated to animals, this may be a very common origin of some outbreaks of typhoid fever; or even if animals have an immunity from this disease, yet, for all we know, the germs may pass through the animal without losing their disease-producing powers, and thus cause the disease to spread. Dr. Kellogg thought the subject should be investigated.

SWEATING OF THE FEET.—Dr. John Morgan thus writes the *Medical Record*: "By applying boric acid thoroughly to the feet, particularly about the nails, between and under the toes, and to the soles, two or three times a week, or oftener, as the case may be, dressing them while there is a good coating of powder on the skin, sweating of the feet may be effectually relieved. The application is easily made and will prove very satisfactory." Washing before and after might help!

VANDERBILT A BEEF EATER.—William K. Vanderbilt says: "I have tried to think if there was one thing that suited my palate more than another. I do not believe there is. My appetite as a rule keeps so good that I can eat one thing with quite as much relish as another. I was brought up on a farm and I confess to an honest liking for good roast beef and mutton. I do not like them too well done or too rare, for I believe that in either state they are indigestible. I want them brown, rich and juicy, and with them I like to have served potatoes white and floury. Above all I desire to have my food prepared and served plainly. Greases, spices and rich flavored condiments are not suited to me and I do not believe they are to any person. My idea is that a taste for them is a vitiated taste."

THE PHYSICAL DEVELOPMENT OF WOMEN.—In the article on the Physical Development of Women, which Dr. D. A. Sargent, of Harvard College, has contributed to the February *Scribner*, he says: "At the present time, women, as a class, have more leisure than men for self-improvement, and we must look to them to help on the higher evolution of mind and body, not only in perfecting themselves, but in helping to perfect others. Already three-fourths of the school-teaching force in the United States is composed of women, and they will soon be in the majority as instructors in physical training. The gospel of fresh air and physical improvement is being slowly imbibed by our best families, and the stock of fine specimens of physical womanhood is slowly and steadily improving."

INSUFFICIENT VACCINATION IN PARIS.—Out of the five thousand children born every month in Paris, only a thousand are vaccinated by the medical officers appointed for that purpose (*The Medical Press*.) The remaining four thousand infants are therefore either vaccinated by private practitioners or not at all. Seeing, however, that more than half the population apply for and receive gratuitous medical attendance, and that half the burials are gratuitous, it is very unlikely that all the four thousand are vaccinated at the cost of the parents. It may fairly be assumed that a large proportion are not vaccinated at all, and that is why small-pox exists as an endemic disease at Paris, and does not disappear, as it has done, to a great extent, in Germany.

GOVERNOR OGLESBY ON THE ILLINOIS BOARD.—The Governor of Illinois, in his last message to the legislature, devotes considerable space to the workings of the admirable State Board of Health of Illinois, saying, among many other good things:

"It is a matter of record—a fact which I understand has now passed into the authentic history of epidemics in this country—that the labors of the Board in this direction resulted in a saving of nearly \$3,500,000 to the people of the State in 1881 and 1882, when small-pox was epidemic. Through the preventive and protective measures then established and since enforced, there has been no repetition of that disease in an epidemic form."

LICE and other parasites are removed from the hair quicker and better by a decoction of quassia, to which a little borax and glycerin have been added, than by almost any other known means.
—*National Druggist*.

THE SPREAD OF SMALL-POX.—As an instance of how small-pox may be spread, the following story taken from the *Lancet*, January 5, 1889, is not without interest. A supper was held in a certain public house at Ormsby, near Middlesborough, England, and, in order to provide sufficient accommodation in a long room, a partition was taken down, and what had served as a bed-chamber was added. In this chamber a servant girl had been recently lying ill with small-pox. A few days after the supper, no less than nine cases of small-pox, believed to have originated in this place, occurred.

ARSENIC IN THE HOME.—Mr. A. W. Stokes (*London Chemical News*) has examined a hundred samples of imitation Indian muslins and cretonnes. He found that twenty-three per cent. contained arsenic in appreciable quantities. The highest proportion, 2.1 grains of white arsenic per yard. The colors in which arsenic was principally present were the terra-cotta reds and the greenish-browns. Of the wall-papers submitted to Mr. Stokes by various manufacturers, ten per cent. were found to contain arsenic. Thirty other articles of household use, such as plushes, velvets, carpets, mats, silks, etc., were examined, and in only one sample—a little flax mat of green color—was arsenic found.

CONSUMPTIVE TRAVELERS.—Mr. G. R. MacMullen, writing in the *Australasian Medical Gazette*, calls attention to the danger that a well person may experience by having a consumptive for a room-mate on a long ocean voyage. The danger is a real one, for what with the lack of ventilation so

evident in steamer state-rooms and the probability that consumption is contagious, the danger of the well becoming affected is far from imaginary. The writer suggests some remedies, but it seems to us that the true remedy is to be found in making known this danger and urging upon the sick that they should so manage as not to place their fellow beings in this dangerous position.

MUSICAL HYGIENE.—It is a well-known fact, says Dr. C. E. Busey in the *Sanitary Era*, that those nations which are given to the cultivation of vocal music are strong, vigorous races, with broad, expansive chests. Vocal music is a gymnastic exercise of the lungs by development of the lung-tissue itself. Phthisis generally begins at the apices of the lungs, because these parts are more inactive, and because the bronchial tubes are so arranged that they carry the inspired air with greater facility to the bases than to the apices. In singing, the amount of inspired air increases more than in walking, as to sing well requires all the capacity of the lungs.

CREMATION OF GARBAGE.—From an exchange we learn that Minneapolis' indefatigable health-officer, Dr. Kilvington, has succeeded in forcing upon the public, against much opposition, a garbage crematory, and his furnace is said to be considerably in advance of others used for like purposes. It is quite inexpensive in operation, gives no odors, and consumes all kinds of refuse. A number of cities have sent their health officials to see this crematory in operation, and it is said Milwaukee already is building two upon the Minneapolis plan.

CARE OF THE TEETH.—Beware of patent tooth preparations of the composition of which you know nothing, says the *Sanitary Inspector*. Many of these contain ingredients which whiten the teeth but leave them after a while fit only for the dentist's forceps. The main thing, in the care of the teeth, is to keep them clean with toothpicks of quill or wood, and then brush with lukewarm water and a little castile soap. Or if you want a tooth powder consult your dentist, if you have come to that, or use the following which your apothecary will put up: Powdered Carbonate of Magnesia, 3 drachms, pulverized Orris Root, 3 drachms, Thymol, 2 grains, Ol. Gaultheria, 4 drops. Mix.

THE PROPORTION OF THE SEXES IN GERMANY.—Recent statistics show that the number of men in Germany is constantly decreasing relatively to that of women, indeed there is an absolute decrease in the male population and an absolute increase in the female. The women outnumber the men in the proportion of 104.3 to 100, although there are more boys than girls. The disproportion is to be accounted for, therefore, by a greater mortality among boys, and by emigration. In Berlin, taking all ages together, there are 108 women to 100 men, of those between 60 and 70 years there are 150 women to 100 men, and between 70 and 80 the numbers are 196 to 100.

THIRST IN YOUNG INFANTS.—It is a mistake to suppose (says an exchange) that because milk is a liquid food it is at the same time a drink which is capable of satisfying the thirst of infants. Although milk appeases hunger, it makes thirst more intense after it has

remained some time in the stomach and digestion has begun. It is thirst which causes healthy, breast-nourished infants to cry for long periods of time in many instances. There are many cases of indigestion due to weakness or insufficiency of the child's gastric juice which would be greatly benefited or even cured if the child were allowed an occasional drink of water.

THE HOUR OF DEATH.—It has been said that the greatest number of deaths occur between four and six o'clock in the morning. As a matter of curiosity, and to ascertain whether there is any truth in this statement, Dr. Charles Féré has tabulated the hour of death of all the patients dying in two of the hospitals in Paris for the past ten years. He found that there was no preponderance of mortality at any particular hour, although there were somewhat fewer deaths between seven and eleven o'clock in the evening than at other periods of the day.

HEALTH.—O thou blessed Health, thou art above all gold and treasure! 'Tis thou who enlargest the soul, and openest all its powers to receive instruction and relish virtue! He that hath thee, hath little more to wish for, and he that is so wretched as to want thee, wants everything with thee.—*Sterne*.

SCIENTIFIC GLUTTONS.—We learn from *Gaillard's Medical Journal* that it is "credibly informed that it is not unusual, in the city of Washington, for young men, before going to dinner parties, in order to better prepare themselves to play the part of gluttons, to wash out their stomachs a short time before the appointed hour."

JAY GOULD'S POTATO.—Jay Gould is particularly fond of baked potatoes, (according to *The Times*) and says that the simpler his food is the better it is for his head. "I find my time filled up pretty much with business," he once said, "and I certainly find I can get along better when my food is the plainest of the plain. I do not mean to say that I do not like some of the dishes which I cannot eat, but fortunately I am not sufficiently fond of them to make it any sacrifice to give them up. Your complex dishes of high flavors are very good, but they are not business."

KEEP THE TRAPS CLOSED.—Always keep the lids of the water-closets closed. Always keep the stoppers in your wash-basins and bath-tubs. When you are closing your house for a while, plug up all the outlets for overflow. And always be sure that water lies in the "traps" of the pipes; for, when it has evaporated, as often occurs during your summer absence, the emanations from some other sewer in connection with yours, perhaps laden with typhoid germs from a distant house, may readily find their way into your premises, and all for want of a little water in the trap.—*Med. World.*

STATISTICS OF CREMATION IN EUROPE.—*The Flame*, the organ of the Cremation Society of Berlin, gives the following as the number of cremations which have occurred in Europe up to August, 1888: In Italy, 998; Gotha, 554; Sweden, 39; England, 16; France, 7; Denmark, 1. The number reported in America during the same period is 287. The following is the total membership of cremation societies in the countries mentioned: Swe-

den, 3012; Denmark, 1326; Holland, 1128; Germany, 612; Italy, 580; Hamburg, 438; Switzerland, 390.

ONE WAY TO CLEANSE A CARPET.—The *Sanitary Volunteer* says: "Having dusted and removed such articles as can be carried from the room, wring a flannel mop out of hot water and wipe the carpet thoroughly, wringing the mop from clean water as often as it may become soiled. Now sweep with a broom as you ordinarily would, and when you have finished you will have a bright, clean carpet, with little or no dust, and all at the expense of a very little hard labor. Those who have not tried this method are skeptical about its merits; but one trial will convince."

APATHY.—When a factory is blown up or a sloop sunk, says Dr. Bell, there is an immediate cry for the punishment of some individual whose selfishness or carelessness has led to a calamity, in order that all men may be warned against the dereliction of duty in time to come. Yet how few remember that besides these occasional droopings, which so startle the ear, there is a great stream of death and misery holding its onward course, as to which they have never asked the question whether or not the bulk of its dark waters may be lessened.

THE SANITARY CONDITION OF NICE is said to have been notably improved within the past year by a new system of sewerage and of disposal of night-soil. Since the completion of these works the mortality of the city has decreased from 32.77 to 24.34 per thousand inhabitants.

REGENERATION OF THE HAIR.—In the *Semaine Médicale*, November 28, 1888, Besnier recommends the following treatment for baldness. The neighborhood of the bald spot is shaved or the hairs which come out easily are removed, and an application is made of a mixture composed of equal parts of chloroform and glacial acetic acid. This mixture has caustic properties, and must be applied lightly with a camel's hair brush each evening; and if the bare spot be large only part of it can be treated at a time, or too much pain will be caused.

THE BEST SAUCE.—According to *The Times*, James R. Pritchess says that he is really omniverous, eating anything that is good and taking plenty of exercise. "One particular ingredient," he said, "ought to be added to every recipe and every menu. That is leisure. Soup ought to be taken with leisure. Fish ought to be taken with leisure. Meat ought to be taken with leisure. Everything you eat ought to be taken with the same sauce."

NAIL BRUSHES. For the purpose of cleansing the finger nails a brush and soap should always be properly used, and since the experiments of Dr. Mittmann, of Wurtzburg, have shown that the accumulations under the nails may contain bacteria, this simple precaution appears all the more necessary. It is a simple but absolutely necessary duty of the accoucheur and the surgeon, and should be the invariable practice of the physician.

IN NORWAY, after the removal of the tax on whiskey, insanity increased fifty per cent. and idiocy one hundred and fifty per cent.

SAM JONES ON "FAITH CURE" AND "CHRISTIAN SCIENCE."—"I'll tell you where this faith cure comes in. There's an old brother and sister who have been taking all the nasty, quack patent medicines on the market for the past ten years. Somebody comes along and prays over 'em, and they quit using the patent medicines and they are well again. They say it was faith that cured. It was faith. It was faith which caused them to quit taking old patent nostrums, which cured them. I don't say I belong to the Christian Science crowd, or anything of that sort; but I thank God, that by the side of my sick wife I may kneel down, and pray that the remedies given by the physician may prove effective. I don't pray over the supernatural. I pray over the pill."—*Philadelphia Medical Times*.

BEWARE OF SCENTED CAKES.—A practical baker says: "If a cake is scented with something pleasing to the smell, you can make up your mind that that cake was thus scented to kill the odor of bad materials. I have seen as many as six bad eggs put into a large cake. The scent used killed the smell. Tainted meat is also used by some conscienceless bakers in mince pies, where the high spicing and liquoring disguises the putridity."

DISINFECTING CARRIAGES IN BERLIN.—The Chief of Police of Berlin has ordered the hospital authorities to note the numbers of the carriages in which patients are taken to the hospitals, and the nature of the diseases of the patients. When the patients are suffering from infectious or contagious diseases the carriages are to be disinfected.

PRECAUTIONS DURING CONVALESCENCE FROM SCARLET FEVER.—Recommended by the Penna. State Board of Health.

1. The patient should remain in the sick chamber, in complete isolation from the public, until the physician declares there is no danger of his conveying the disease.

2. He should, before leaving his room, take warm baths for several days, care being taken to remove every particle of loose skin from the body and head. These baths should only be taken when permitted by the attending physician, and in a warmed room. The patient should never appear, on recovery, in public in any clothing worn while he was sick, nor for the two weeks before he was taken sick, until such clothing has been thoroughly disinfected. So long as there is any peeling of the skin or any soreness of throat or eyes, or any symptoms of dropsy, recovery is not complete.

3. He should be very careful of himself for some weeks, dressing warmly in woolen garments, avoiding chills and colds, and using the eyes very little for reading or study.

GOOD BREAD FOR DIABETICS.—

Samples of bread for diabetics were lately shown to the Section for Clinical Medicine, Pathology and Hygiene of the Massachusetts Medical Society by DR. J. A. JEFFRIES, who furnished the following formulas for their preparation :

One cup of graham flour ; one cup of best bran previously scalded with one cup of boiling water ; two eggs ; German yeast or baking powder ; salt to taste ; one cup of milk or water. To be mixed with a *spoon*.

Such a bread contained 17.72 per

cent. of starch, the equivalent of 19.68 per cent. of sugar.

One cup gluten flour ; one cup best bran previously scalded ; one teaspoonful of baking powder ; salt to taste ; two eggs ; one cup of milk or water. To be mixed with a *spoon*. If the hands are used the result will be even more disastrous than in the making of ordinary bread. This bread is healthy, palatable, nutritious, and contains but 4.57 per cent of starch, equal to 5.08 per cent. of sugar.

PRECAUTIONS IN REGARD TO BURIALS.—Recommended by the Penna. State Board of Health. After death, the body should be wrapped in a sheet saturated with a solution of corrosive sublimate, or placed in an air-tight coffin, and buried as soon as possible. The body should not be exposed to view after being placed in the coffin. The funeral should be as private as possible, and certainly no children should be present. Undertakers should not furnish chairs or any other articles which may become infected. Such articles as they do furnish should be washed with a solution of corrosive sublimate before being used elsewhere.

INSECT INSTINCT AND ADULTERATION.—Bees are said by the *Lancet* to be unerring connoisseurs of saccharin substances. To the human palate cane sugar, beet root sugar and saccharin, are pretty much alike, but bees will have nothing to do with the last two. They are partial to glycerine, but discriminate against impure samples. What is wanted in the country is an insect that will instruct inmates of hotels and boarding houses in the mysteries of the butter-dish.

ARSENIC POISONING.—A family party, consisting of the father and four children, narrowly escaped death by poisoning, recently, in a village in England. In the absence of the father and mother, the children made some pancakes for breakfast, mixing what they took to be soda, but which was in reality a paper of arsenic mixture, with the flour. After the father and children had partaken of the pancakes, they soon exhibited symptoms of poisoning and became violently ill. A neighbor who was called in administered an emetic, which took effect, and saved their lives.

DIPHTHERIA *versus* YELLOW FEVER.—The annual report of the Health Officer of Brooklyn shows a greater mortality from diphtheria alone, than have died from yellow fever in Florida during the same period. The report shows that 984 deaths occurred in Brooklyn from diphtheria in 1888.

CARBONATED WATERS.—The Sanitary superintendent of New York City, says the *New York Medical Journal*, Feb. 2, has reported to the Health Board that water contaminated with sewage is being used in some instances in the manufacture of carbonated waters.

TO LIMIT MARRIAGE.—A bill has been introduced into the Legislature of Kentucky which prohibits marriage with an idiot, lunatic, pauper, vagrant, tramp, gambler, felon or any person rendered physically helpless or unfit for the marriage relation, or any person with a violent temper.

STATE BOARD OF HEALTH AND VITAL STATISTICS, OF THE COMMONWEALTH OF PENNSYLVANIA.

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PLACE OF MEETING,

Supreme Court Room, State Capitol,
Harrisburg unless otherwise ordered.

TIME OF MEETING,

Second Wednesday in May, July and Nov.

EXECUTIVE COMMITTEE,

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HOWARD MURPHY, C. E.
JOSEPH F. EDWARDS, M. D.
BENJAMIN LEE, M. D., Secretary.

Place of Meeting,

(Until otherwise ordered).

Executive Office, 1532 Pine St., Philad'a.

Time of Meeting,

Third Wednesdays in January, April, July
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1532 Pine Street, Philadelphia.

Bureau of Registration and Vital Statistics.

Department of Internal Affairs,
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*State Superintendent of Registration of
Vital Statistics.*

BENJAMIN LEE, M. D.

THE ANNALS OF HYGIENE.

VOL. IV.

PHILADELPHIA, APRIL 1, 1889.

No. 4.

COMMUNICATIONS.

HEALTHY HOUSE BUILDING.

BY C. FRANCIS OSBORNE,

Consulting Architect, Cornell University, Ithaca, N. Y.

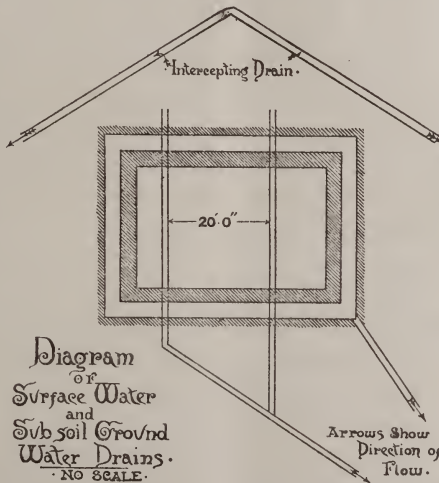
The damp-proof course shown in the illustration accompanying the preceding article may most easily be made by laying two courses of slate in pure cement mortar about midway between the level of the outside grade and the bottom of the floor joists of the ground floor. The upper course of slate should be so laid as to cover the joists in the lower course, and the whole well covered with cement. In masonry houses the weight of the superstructure would be so great as to fracture the slates, and in such cases the only safe method of forming the damp-proof course is to spread a layer of hot asphalt over the entire thickness of the wall, in the same position as suggested for the slate. The object of this course is to prevent the dampness, which results from the splashing caused by heavy rain storms at the surface of the ground from

rising to the timbers and causing speedy decay.

The matter of cellar floors is an important one, requiring careful attention. It may be laid down as a general rule that the whole cellar bottom should be overlaid with a course of cement concrete not less than four inches thick. This may be composed of Rosendale cement (or "water-lime" where the latter can be easily procured,)

mixed with two parts of sand and three parts of small stone chips, or well washed coarse gravel—though the latter cannot always be depended on unless laid under expert supervision. This should be mixed in small quantities and used as soon as made, being well rammed as soon as deposited and

then left undisturbed until perfectly hard. Many cement floors which otherwise would be perfectly satisfactory are injured by workmen who tramp over them a day or two after they are in place. They should be left undisturbed for at least ten days. When this concrete is thoroughly hard it should be covered with a layer of Portland cement about three-quarters of an inch thick, which should itself



be left to harden five or six days. The Portland cement should be unmix-
ed with sand. This will give a sur-
face as hard as stone, and one that
will stand uninjured any amount of
traffic likely to be carried on in a
dwelling house. Portland is the only
cement that will not grind to dust
under the wear and tear of traffic.

Where wooden floors are desired,
(and they should be always laid in
rooms where continuous labor is carried
on, such as laundries, etc.,) the follow-
ing method should be adopted. Chest-
nut or locust joists, two inches by four
inches, laid flat, should be nailed with
long nails to the concrete. The space
between the joists should be filled with
cinders or coal-ashes, and a top floor
of hard pine tongued and grooved
nailed upon the joists. This is much
better than the old way of bedding the
joists in the concrete, as they were
then very liable to decay. Satisfactory
floors have been reported from England
where the floor-boards have been
nailed directly to the concrete without
the intervention of joists, but the
experiment has not been tried long
enough to determine how such floors
will resist dampness. Of course when
a wooden floor is to be laid the top
surface of Portland cement may be
omitted.

Let the cellar be thoroughly well
lighted, with windows especially insert-
ed for the admission of as much sun-
light as possible. Never allow win-
dows (except for purpose of getting
a cross-draft,) to be placed beneath
low porches, verandahs, etc, where no
light can by any possibility gain ad-
mission. The cellars should be as
well lighted and aired as any other
part of the house. House cellars are
usually placed too far in the ground.

So far as protection from frost is con-
cerned, the bottom of the footing need
not be more than five feet below grade.
If the cellar has a clear height of
seven and one-half or eight feet this
should bring the top of the foun-
dation wall three feet and one-half or
four feet above grade. This will allow
of ample window openings.

Let us now, before leaving the sub-
ject of the foundation walls, consider
how the ground water may be exclud-
ed in damp situations. Below the
cellar floor, at intervals of twenty feet,
let trenches about eight inches wide at
bottom and two feet deep be dug.
These trenches should have a fall of
about one-eighth of an inch to the foot
in the direction of the natural fall of
the land. They may unite twenty
feet or so outside the foundation walls
and should be continued so far as
either to reach the surface of the
ground in the course of the natural
fall of the grade, or, if that cannot be
accomplished within the limits of the
site, so far as to empty into a dry
leaching cesspool above the level of
high water. On the bottom of these
trenches should be laid two-inch porous
chain tiles with strips of tarred paper
to cover the joints. The pipes should
have a continuous unbroken fall to
their termination. Over the pipes to
a depth of six or eight inches should
be placed small broken stone chips,
over these to the level of the cellar
floor, (and to a similar depth outside
the walls,) the trench should be filled
with *clay*, well rammed down, to form
an impervious layer through which
the water cannot penetrate. The
action of these subsoil trenches is obvi-
ous. The ground water tending to
rise to the level of the cellar floor en-
counters the drains, and unable to rise

above the tile and broken stone is conveyed harmlessly away.

The accompanying illustration is the plan of the outside foundation walls of a dwelling house, showing the outside drain referred to in the last article, and the subsoil drains described above. The V shaped drain shown beyond the walls, is a drain sometimes dug on the up hill side of a house, thirty or forty feet distant, where there is reason to apprehend an unusually large flow of surface water, as in clay soils, or where the house foundations are excavated in stratified rock. This drain should be as deep as the bottom of the footing course of the cellar walls extending well beyond the house on either side, and should be filled with *porous* material, after the manner of the outside chain described in the preceding article.

MILK AND MOTHERHOOD.

BY EPHRAIM CUTTER, M.D., LL.D.,
OF NEW YORK.

*Introduction.—Lactation During Menses;
Should the Babe be Nursed then?
Answer—Yes.*

Let the mother be specially careful to adhere to the plans of motherhood and she need apprehend no trouble.

The recurrence of the menses generally shows a strong constitution, though the breast milk is thought not to be so good. Still it is better than artificial foods.

It is wonderful how easy it is to make a mother believe her milk is bad or even poisonous to the babe born from her womb and made out of her own blood. If she will feed as here directed there cannot be a pois-

onous quality in her milk, unless she may be in a walled city captured by a besieging armed host, instances of which are related in history, but must be as rare now as walled cities are.

To repeat, the mother's milk is made out of her blood by the epithelial cells of the lining membrane of the tubes of the mammary glands. The milk is a product of the protoplasm of the epithelial cells under the wonderful, simple, but not yet understood, life chemistry of these cells. The blood, loaded with its food products, congests the tissues, and the wonderful product called milk is secreted, specially under the stimulus of sucking. The cells that secrete bile have the same protoplasm to our observation, but why cells in the liver secrete bile and cells in the breast secrete milk is as abstruse a problem as the reason of the yellow color of gold, the whiteness of silver, etc.? Here we are on the confines that come between us and our Creator. Some say it is the nature of the liver cells to secrete bile and of the mammary cells to secrete milk. These are satisfactory explanations to finite minds, as the word "Nature" implies a God and Creator. Derived from the verb "nascein," to be born, the word "Nature" refers back to a being whence the things we find in Nature were born—to a fatherhood and motherhood in an Almighty Creator, "in whom we live and move and have our being." Indeed the subject under contemplation is one of the many connected with the text.

Did not motherhood furnish breast milk, healthy human life could not be sustained, and, indeed, it is God who fashioned, made and regulated the epithelial cells of the mammary glands,

so that they could secrete this wonderful liquid called

Milk.

The following are some of the interesting things that can be said about milk as a food, which may as well come in here, since the prime object of this writing is to secure a plentiful and healthful supply of this wonderful food, in drinking which will ensure to the offspring a good constitution to fight the battles of life with and thus increase the value and happiness of the coming human race.

Milk is Peculiar in its Color being White.

The color is due to the diffraction of light by the minute globules of fat that curiously float in and move about through its substance. When the milk is allowed to stand for twelve hours the fat rises to the top and is colored a dirty yellowish white, but there are enough fat globules left in the fluid below the cream to make the milk white, or rather a bluish white, which blue may be due to the color of the water, as it has been proved that the natural color of water is blue. The fat is in a state of emulsion, and in milk we find the most perfect emulsion. It cannot be said that the white color is given to make it attractive or to put milk high up among the aristocracy of liquids, as white color does among men, for in the natural condition and use of milk it is invisible and goes directly from the gland warm into the mouth of the babe or without any exposure to the atmospheric germs of fermentation or diseased conditions, nor absorption of odors, nor dilution with water, or any sophistication from the outside. In other words, the child gets the milk pure and unadulterated, warm with the life of the mother and ready to be digested and assimilated.

The troubles that have come from a colored skin, such as our late civil war bred, do not affect milk. White it has been, white it is and white it will be among all nations and peoples. Whether it is a superior color to black or bronze or yellow, or all else, it is enjoyed by all human beings, and has been sung of by poets. To repeat, there is no color line with milk.

Milk taken naturally, is warm and enters directly as such into the alimentary canal. This is regarded as a most healthful procedure, as there is no admixture of foreign odors, vegetations, no dilution, no chemical changes from telluric and atmospheric, electrical or other influences. It is warm with life, full of vital force, and is in a nascent condition ready to do the most good. (Here it may be said that good things bear repetition, a good dinner for example, so the reader must expect to see some facts reiterated, not after the style of 'line upon line,' but with this purpose, to charm into motherhood, instructions to the advantage of all concerned.)

In January, 1887, at the Zoological Garden in Central Park, New York, a baby camel was born. The mother and baby were kept in the same enclosure. It was wonderful to see what splendid development in every respect that baby camel had. By September the animal was almost as large as its mother, and a most beautiful creature to look on, full of life and activity, and with a splendid physical development. Now this is not a solitary case. It is paralleled with other animals and understood well by breeders of cattle. It cannot be denied that those calves which are reared on and take *all* their mother's milk are better developed and more handsome creatures than those

fed on the skim milk or grazing. Still the aim of the farmer is so much for immediate returns for his stock that the condition of calves is getting to be almost as bad as that of human beings fed on the bottle, and there is need of a crusade for the benefit of these poor calves.

The disadvantages of calves fed on skim milk stick out in the hair, the pot bellies, the body pointed at both ends (caused by the undue distension by gases formed by the fermenting, lifeless, cold food),* the moping gait, the anxious looks and the ill-development of the ill-fated calves.

The case of Rameses II is a striking illustration. If he was suckled till he was seventeen years of age he must have had a splendid start in the world, like the Central Park camel. In the absence of any fact to the contrary we may infer that it was understood that long lactation was a great advantage physically, and that the ancients were wiser in the matter, and considered it to be so good an example that the process of suckling a seventeen years' old boy was depicted on a monument which is extant to-day.

The late Japanese Minister to this country, the Honorable R. Kuki, informed me that it was the custom for noble Japanese women to suckle their children sometimes to the age of ten years.

It is quite certain that if any mother of our nation should suckle her boy to the age of ten years, as in Japan, or to that of seventeen years, as in old

Egypt, and it should become known, she would excite attention and ridicule, so much do conventional usages here militate against doing a thing which is the best motherhood can do for childhood: give it plenty of warm, fresh milk from the breast.

Dr. Salisbury practices on this idea, and makes his patients take milk warm from the cow. A pint bottle, previously prepared properly and warmed is held so that the stream of milk from one teat is injected into the open mouth so as not to impinge on the wall of the neck. When the bottle is filled the patient immediately drinks it rapidly. It would be better to take it directly by the teat if it could be done. Here it may be remarked of this wonderful man that he was born on a farm, and when a boy used to go about with a silver cup tied to his neck by a string. Whenever he chose he was allowed to go among the cows and get a drink of milk warm from the udder. Possibly this lactation may explain the unusual intellect he possesses and the great things he has done in medicine, which rank him as a peer with Hippocrates and Galen. At any rate I am quite sure if mothers wish to raise up noble specimens of manhood to bless the world they will make no mistake if they feed as here directed, and give their babes plenty of healthy breast milk warm and directly from the gland. If they do this they will give their children the materials to make good brains and intellects—to make good bony development—while the glands of the digestive apparatus, not being clogged with gases, vinegar, alcohol, etc., which come from the fermentation of food ordinarily given to babes, do their work so nicely and thoroughly that there is nerve force left to do work

* "They do not feed their food to them cold, at least the best of the stock raisers do not, but take every precaution to see that the food is as near normal as possible; yet, when they have a calf which is very valuable, as the heifer of celebrated strains of blood, they will turn her in with her mother, and in some cases save a delicate animal, thus illustrating the point, though we must give these men the benefit of trying to give these calves the best artificial food possible." J. A. C.

with in building up the whole body compactly, strongly and well knit. If you want to get a big soft head, an intellect ripening before its time, a prostrated nervous system, teeth that decay ere they have time to mature, making artificial dentures needful at the age of fifteen years, if you want them of consumptive tendencies and development, to give the family steady employment taking up time with the care of unnecessarily sick children, make your house a hospital and have frequent funerals, then do not feed milk warm from the breast, but feed everything you can think of, without any order, system or reason, and you will soon overwhelm the digestive organs of your children and all the above stated wants will be supplied.

O, physicians ! see to it that mothers give us a race of noble men and women fitted to serve God and our country in the various walks of life with honor and glory ! Thus will you exalt motherhood, and never will the conventional woman question ever be missed, for they will be noble partners with fathers, "bespeaking love, joy and bliss."

A BRIEF RETROSPECT OF THE WORK OF THE STATE BOARD OF HEALTH.

BY BENJAMIN LEE, A. M., M. D.,
SECRETARY.

If I were called upon to condense into a single phrase the results achieved for the protection of the health of the people of this commonwealth, by the State Board of Health, during the brief period of its existence, I would say "The quickening of the public con-

science to a sense of its sins of omission in its disregard of the laws of health, which, after all, are the laws of God." It is now beginning to dawn upon the public mind that when we designate epidemics of preventable diseases as "visitations of Divine Providence," we are but "flouting our filth in the face of Deity," and charging him with calamities which are really due to our neglect and defiance as communities as well as individuals of his unchanging laws. The proof of this awakening is found in two facts ; first, the constantly increasing demand upon the Board for its precautionary circulars in reference to the different contagious and infectious diseases, and secondly, in the growing tendency to sanitary organization for self protection in small towns. The inquiries for circulars come from individuals in whose families, or in those of their neighbors, such disease has made its appearance, from physicians, from school teachers, from municipal authorities, from Boards of Health. Now, it is a father who has lost a child from that fatal pest diphtheria, and fears that all his little ones are to be snatched from him—perhaps a poor miner who sends a scarcely legible scrawl on a postal card, praying for a circular which he has seen mentioned in the newspaper, to tell him what means he shall take to save the rest of his darlings ; now it is a borough council who send for fifty or a hundred copies at once ; again it is a school teacher, in some remote district, who begins to feel her responsibility for the health of the children entrusted to her care.

These circulars—which have been prepared and distributed by the tens of thousands, through the liberality of the State Legislature in the matter of print-

ing—have been upon the following subjects :—

No. 7. Precautions against Cholera.

No. 8. Precautions against Small-Pox.

No. 18. Precautions against Typhoid Fever.

No. 19. Precautions against Diphtheria.

No. 20. Precautions against Contagious and Infectious Diseases.

No. 20. Verwahrungen gegen Ansteckende und Pestartige Krankheiten.

No. 21. Precautions against Scarlet Fever.

No. 22. Precautions against Trichinosis.

No. 24. Recommendations in regard to the care of Infants.

No. 26. On School Hygiene.

The instinct once aroused which leads the individual to appeal for help to the State Board of Health in any community, and the public intelligence thus stimulated, the question is not long in suggesting itself "What must we do to be saved" from these constantly recurring pestilences? What steps shall we take as a village or a borough to free ourselves from their ravages? How can we organize a Board of Health and what ordinances should we adopt for the enforcement of sanitary precautions?

To all such inquiries from un-incorporated villages, the Board is compelled to make answer—"The Legislature has made no provision for your sanitary organization. You can do nothing." For all boroughs and cities the Board has prepared Circular No. 10, "A Model Ordinance for the Better Preservation of the Public Health in Cities and Boroughs"—and in default of any legislative provision for Boards of Health in boroughs, it advises them to

fall back upon the general grant "of power to make regulations to protect the public health" and to organize a Board of Health on the model furnished by the Legislature for small cities. It also provides them a complete set of rules for organizing and carrying on a Board of Health.

Another means resorted to for discharging the duty, imposed upon the Board by law, of "disseminating information upon these subjects among the people" has been the holding of Sanitary Conventions in different parts of the State. The valuable papers and interesting discussions before these popular assemblies have instructed not only those who were present, but through the kind courtesy of the daily press, the entire reading population. An important medium of conveying information to those who have begun to thirst for such knowledge has been the ANNALS OF HYGIENE, in which, each month, much valuable matter has been spread before its readers in addition to the complete reports of the Sanitary Conventions, of the meetings of the Board, of sanitary inspections, and similar subjects. All this has been work which has required the devotion of much time, patient study and earnest thought. But the Board is satisfied that it has not been thrown away, and that the seed which it has sown has fallen upon the fruitful soil of "good and honest hearts."

Much of the attention and nearly all of the means at the command of the Board has been devoted to the investigation of nuisances, insanitary conditions and local epidemics for relief from which it has received applications from every part of the State. In order to attend to this part of the work more intelligently it has divided the State

into districts, and appointed an agent in each, under the title of Medical Inspector, to whom a complaint received at the Executive office is at once referred, and by whom a report is made to the Secretary on which the Board bases its action. In this way it has the satisfaction of knowing that it has aided the local authorities in improving the health conditions of many places, and in cutting short a number of serious epidemics. In one instance at least, it has been the means of preventing the pollution of the water supply of a large city, and thus saving it from an experience similar to that of Plymouth. Nothing could more convincingly demonstrate the need for complete sanitary organization of the State, such as is proposed in a bill now before the Legislature, than the appeals which have been pouring in upon the Board from the first week of its existence for the correction of conditions injurious to the health of the people living in the country and in villages.

Beyond a few analyses of drinking waters sent from different towns, the Board has been prevented by want of funds from undertaking any laboratory investigation.

In the matter of vital statistics, the importance of which is recognized in all civilized countries, forms for complete registration of births, deaths, marriages, preventable diseases, and medical practitioners, have been prepared and printed, but little work has been successfully accomplished because of the lack of proper machinery. A tolerably complete return of Registered Practitioners of Medicine and Surgery has, however, been obtained, which will appear in the next annual report.

Among the important services rendered by the Board may be mentioned

the compilation and publication of a complete "Compendium of the Laws relating to Public Health and Safety of the State of Pennsylvania, together with the Decisions of the Supreme Court and County Courts relating thereto," forming a volume of one hundred and seventy-five pages, with copious marginal notes and a full index, and constituting a very handy book of reference for all municipal and health officers and boards, inspectors and judicial officers.

The "Second Annual Report of the Board," a volume of more than a thousand pages, has been conceded to be one of the most valuable documents of the kind ever issued by any State. "Of the "Third Annual Report," the Hon. Richard Vaux, whose life-long interest in public reforms and State institutions is known to every one, says: "I have read it with much interest. It seems to me that these official papers which come from professional authors and executive professional men, are now the most valuable contributions to science." Of the "Fourth Annual Report," now in the printer's hands, it can simply be said that it will not fall behind its predecessors in value and interest.

To the constant representations of the Board from the day of its first meeting is, in part, at least, due the fact that Congress has at length consented to establish and maintain a thoroughly equipped quarantine station at the mouth of Delaware Bay, thus affording an additional and much needed safeguard against the invasion of infectious diseases from abroad.

Dr. John S. Billings, Surgeon, U. S. A., former Vice-President of the National Board of Health, recognized as one of the leading sanitarians of the

country, in an introduction to the noble volumes on Hygiene and Public Health, in the American edition of Ziemssen's Cyclopædia, published in 1879, says:—

"It is evident that hygiene is not only a subject of scientific interest to the student or to medical men, but that to the *political economist* and the *legislator* its problems and discoveries ought to be of great practical importance—greater in fact than many of the subjects with which these gentlemen usually occupy themselves: and, at first sight, it may seem strange that it should not receive more attention and consideration from politicians and legislative bodies than we actually find to be the case. A Standing Committee on Public Health would be about the last committee that either Congress or a State Legislature would think of organizing."

When it is remarked, in conclusion, that both branches of the Legislature of Pennsylvania have now a Standing Committee on Public Health and Sanitation, and that Pennsylvania has been the first State in the Union to take this important step in advance, it will be conceded that the claim put forth at the beginning of these remarks that the State Board of Health has been quietly and surely moulding public opinion in favor of sanitary reform, was not without substantial foundation. May we not confidently anticipate that the day is not far distant when the aphorism of England's great premier, Lord Beaconsfield, that "the health of the people is the first care of the Statesman," will be universally accepted by our public men?

A CITIZEN OF IONA, Mich., while standing with wet rubbers on an iron doorstep, suddenly lost the power of walking. He nearly fainted with terror, thinking he was paralyzed. Upon discovering that his rubbers were frozen to the doorstep he felt better.

TOO MUCH MEDICINE.*

BY WILLIAM B. DEWEES, A. M., M. D.

SALINA, KANSAS.

Wise statesmen tell us the world is governed too much. With even greater truth and force it may be said that the world is drugged too much. To discover truth in science the most learned will admit is very often difficult, but in no science is it more difficult than in medicine.

Health is represented in the natural or standard condition of the living body. My wish is to be intelligent rather than scholastic, and I should puzzle myself as well as you were I to attempt to lay down a strict and scientific definition of what is meant by the term health. It is sufficient for our purpose to say that it is bodily comfort.

Whenever pain or uneasiness renders the body uncomfortable, it, strictly speaking, is diseased.

However slight or severe the nature of the discomfort, the physician, being consulted, must always and in all cases, without exception, be guided in his course of treatment by keeping in view, first and foremost, the two cardinal objects:—

1. That he does the patient good.
2. That, at least, he does the patient no harm.

The best and safest practitioner is he who knows when to abstain from acting as well as when to act; in other words, who has learned when and to what extent the case can be left to the salutary processes of nature.

There are few essentials necessary to the attainment of health, to wit:—

1. Pure atmosphere and water.

* Abstract of a paper in the *Medical Bulletin*.

2. Wholesome food in quantity and quality.

3. Freedom from contagious and infectious diseases.

4. The inheritance of a healthy constitution.

Either of these primitive essentials of health is controlled but little, if any, by the individual efforts of man. To medical science solely must mankind look for the foundation-rock from whence the principles governing these essentials of nature's law are to be revealed by virtue of intelligent, progressive, active, zealous, and truly conscientious physicians, who will, sooner or later, succeed in educating the legislator to understand and realize the all important and paramount fact, that only through the State or municipal government can we ever hope to see mankind enjoy these blessings. Until then—

"Antis may come and Antis may go,
But disease goes on forever."

Providence put into our hands the means of preserving health, and this gift involves responsibility. Health will be counted among those talents for the use of which we are to answer to our Creator, and it is our duty to become fully acquainted with those laws which regulate and govern it. There is no doubt that we bring most of our diseases upon ourselves by imprudence and the want of a proper knowledge to prevent them; hence, we must feel assured that nature will, sooner or later, call us to account for a violation of her laws. It is true, for a time we may escape, but the debt and its interest are accumulating, which must all finally be paid. Let us, then, as members of the most noble of all professions, be true advocates of its best principles.

Perhaps the best working hypothesis

in relation to health and the departure from it that is fairly deducible from the drift of modern investigation is to regard all diseased conditions as being penal—that is, as penalties or punishments for broken laws—and then to remember that the judges and juries who try the infractions of health laws and impose the penalties are out of reach of sympathies and emotions, and cannot be tampered with; that the decisions are final, because there is no court of appeal nor pardoning power; and, finally, that the penalty is in degree exactly proportionate to the extent to which the laws are broken.

The skillful physician, although he uses medicine, can hardly be said to use it as a curative, but rather to remove obstructions, or to arrest the progress of diseased condition. For cure, he looks to the strength of the constitution which remains; to the powers of nature to rally; to diet, drink, sleep, exercise, cleanliness, change of air, hope, cheerfulness, etc. This clearly explains why it is that the most distinguished physicians feel the deepest conviction of the uncertainty of medicine.

Boerhaave in the preface to his "Aphorisms" professes that he knows of nothing which can be fitly termed a remedy.

The distinguished Dr. Radcliffe said: "The whole mystery of physic might be written on half a sheet of paper."

Dr. Bostwick, author of the "History of Medicine," says: "Every dose of medicine is a blind experiment."

Prof. Willard Parker, M.D., writes: "Of all sciences, medicine is the most uncertain."

Dr. McClintock: "Mercury has made more cripples than all wars combined."

The Emperor Hadrian deliberately prepared the following epitaph for his tomb :—

“It was the multitude of physicians killed the Emperor.”

Sir Astley Cooper : “The science of medicine is founded on conjecture and improved by murder.”

Professor Chapman, M. D., of Philadelphia, in his work says : “Taking drugs habitually conduces to destroy the stomach. Every ache or discomfort, real or imaginary, must be relieved, till finally the powers of the stomach are worn out, and derangements, functional or structural, take place. It would be salutary were such people constantly to bear in mind the epitaph of the Italian count who fell a victim to his bad habits :—

‘I was well—
Wished to be better,
Took physic and died.’

Pitican, on being asked what he thought of a certain treatise on fevers, declared : “I do not like fever curers. You may guide a fever ; you cannot cure it. What would you think of a pilot who attempted to quell a storm ? Either position is equally absurd. In the storm you steer the ship as well as you can ; and in a fever you can only employ patience and judicious measures to meet the difficulties of the case.”

Sir William Gull, the physician-in-chief to his Royal Highness, the Prince of Wales, during a severe attack of typhoid fever, but little more than one year ago, declared, after the favorable recovery of his patient, that he gave him only five doses of medicine during his entire illness. Was it not a very lucky day for the Prince when he came under the care of Knighted Gull ?

Dr. Shippen, a most distinguished

medical teacher of Philadelphia for forty years or more, in days gone by wrote : “If you find it necessary to have recourse to medicine, there are three kinds which you may make use of with safety, viz. : a tranquil mind, exercise, and a temperate diet. These are the best remedies I have ever prescribed.”

Dr. Dumoulin, a celebrated and most experienced French physician, on his death-bed, when surrounded by three of the most distinguished medical men of Paris, who were regretting the loss which the profession would sustain in his death, said : “My friends, I leave behind me three physicians much greater than myself.” Being much pressed to name them—each of the three doctors supposing himself to be one of them—he answered, “Water, exercise and diet.”

Dr. Oliver Wendell Holmes, the poet physician, before a medical class in Cambridge, Mass., in 1861, said : “The disgrace of medicine has been that colossal system of self-deception, in obedience to which minds have been emptied of the cankering minerals, the vegetable kingdom robbed of all its growths, the entrails of animals taxed for their impurities, the poison-bags of reptiles drained of their venom, and all the inconceivable abominations thus obtained thrust down the throats of human beings suffering from some fault of organization, nourishment, or vital stimulation.”

Dr. Benjamin Rush—a nobler and truer character and searcher after truth never adorned the profession—wrote that “if the same amount of care had been taken to instruct and improve the human species that has been bestowed upon domestic animals during the last century, there would have been

but little need or use for medicine.”

To more forcibly demonstrate the truth of what is hereinbefore said, let me call your attention to two of the most common ailments known to mankind, viz. : indigestion and constipation. These are conditions well understood, and the serious difficulties to which they lead are well recognized, while the teachings of the schools and text books in regard to them are so full and sufficient that it is out of the question to say anything new about them ; therefore, I shall confine myself to simply reiterating such facts and principles as will serve to demonstrate wherein the law of health—nature’s law—is violated. Thus I shall endeavor to prove that indigestion and constipation are most often, if not generally, at their onset the penalty of broken laws ; and then when allowed to become fixed by the tremendous force of habit they are apt to become the law of the economy.

There are many causes of indigestion and of constipation, and therefore many kinds : but there is one single condition that is so common to all kinds as to be almost universal. The law of health seems to be that while food is taken into the system about three times daily, the residuary and watery portions of the food and of the tissues should be discharged once daily out of the system. The food must be converted into solution prior to digestion, and digested prior to assimilation ; any interruption or arrest of these orderly processes constitutes digestion ; while if the food continues to be taken, and the discharge of its residue out of the system be diminished or interrupted, constipation results. Thus we have incomplete solution of the food taken as the most frequent and universal

cause of indigestion, while the residuary matter of the food becomes so dry and hard that the means provided by economy for their extrusion are insufficient, and here, then, we have the prevailing cause of constipation. The source of the causes of these abnormal conditions, therefore, must be sought out and corrected.

Insufficient supply of water is, probably, the ultimate cause of three-fourths of the cases of ordinary dyspepsia and constipation. The appetite for liquids, which, under strictly normal conditions would regulate the supply to the demand, is, under the ordinary conditions of civilized life, largely controlled by habit, and habits are often established by thoughtless concessions to convenience. Habit has quite as much to do with the taking of food and drink at stated periods as appetite, the latter merely coming in to decide how much shall be taken, and this decision, often based upon the quality of the food and the time allotted to the process, together with too much liquid taken with the food, so embarrasses digestion as to cause inconvenience, and thus not only is a bad habit prevented, but a still worse habit of taking too little liquid is liable to be fallen into. So, too, with drink proper, or water taken at other than meal times ; the appetite for it is often not strong enough to break through the occupations of time, and by habitual neglect soon disappears altogether.

Any one who is sufficiently observant of his lesser instinctive wants will find that not only is from one to two glasses of water acceptable with the taking of food at each of the three daily meals, to enable the first stages of digestion and absorption to be completed, but that also after these first stages a glass

of water is particularly acceptable, and equally so the last thing before retiring in the evening and the first thing in the morning after rising, and the most acceptable time will vary with the rapidity of the digestion of the individual, generally from one to two hours after the meal. Then, also, other times for taking water will depend largely upon the amount of exercise, since these are chiefly to supply the waste of the water from the system through the lungs and skin.

Any one in doubt of these principles need but try, as did I some years since, a treatment of indigestion and constipation founded upon these principles, and a careful observer will, soon after adopting such, by convincing evidence learn the truth of this natural law, as I have, many times every year since, had abundant testimony in proof of its efficacy.

The very common relief obtained in dyspepsia and constipation from the use of the fashionable mineral waters is doubtless largely due to simply the water. Persons go to the mineral springs or use mineral waters at home, thus increasing the quantity of water taken by from one to three glasses, at least, each day beyond the previous habit; and it is not wonderful, but quite natural, from the foregoing considerations of the natural or primitive law of health of the economy, that indigestion and constipation should be relieved and prevented, even if the very small proportion of salines be kept out of the question. As a large proportion of the effectively lauded mineral waters contain less than one-half of 1 per cent. of total solids, it is not difficult to understand that the water alone is the important element; which is so particularly demonstrated by the fact

that, of late, since the Sangrado treatment of hot water has been revived and has become so popular for all difficulties of digestion as to constitute a craze, which, as will be undoubtedly seen by some inquiry and observation, is not only equally effective in relieving constipation in the same cases in proportion as it benefits digestion, but that, used hot for digestion, it is followed with results quite as good, of course, to constipation, as when water is taken cold.

A good way, if not the best way, of taking water is in the form of fresh fruit, and when fruit stands get to be as numerous in the streets as mineral-water stands, and dishes of fruit more common on tables at meal time, there will be less indigestion and constipation. In fruit the water is so combined with mucilaginous, saccharine, and acidulous elements that it is not so easily or so rapidly absorbed from the residues, and the residues of many fruits, such as the very wholesome banana, are larger and more pultaceous than from other foods. Finally, this rational treatment of indigestion and constipation may be summed up as follows:

Take enough water with the food and a large glassful during the later stages of each digestion. Then carefully watch for an appetite for more water between the meals, and satisfy it when it arises. This will cure many cases. But if the kidneys drain off this additional water as fast as it is taken, as will not unfrequently happen, especially in the beginning of such treatment, leaving the dyspeptic and constipated condition unchanged—this may be only for a week or two, sometimes longer—treatment must be persisted in, remembering that it naturally

takes about as long to break up a bad habit as it did to establish it. This will generally correct the condition, and once corrected properly, the normal supply of liquid—water—will, after a time, prevent a recurrence of what never could have occurred under the laws for a healthy economy. In fact, a copious supply of water is as necessary to the internal as to the external cleanliness of the animal economy, and no system of individual digestion and assimilation, or drainage and sewerage, can be natural or effective without it. Internal cleanliness is quite as near to Godliness as external, and is as much the law of health, and as a law it has been quite as long known, quite as often broken, and with the same penalties.

This age is favorable to every species of improvement. Darkness, superstition, and ignorance have passed and are known only as things belonging to the past dark ages, and we live under the first general dawn of the human intellect. Every day produces some new discoveries made in nearly all the sciences, which look more like magic than human agencies, and which in proportion to their simplicity reveal the true workings of nature.

The advancement in the progress of the science and art of medicine is becoming so rapid that already are the rays of its light illuminating the minds of the judicious searchers after truth in the profession, who have already lasting impressions of a conviction of the truth, of seeing nature in disease; that prevention is far greater in worth than cure; that sanitation is the true channel for the perfection of the science and art of medicine; that we are evidently approaching the dawn of that period, predicted by the great Dr. Symes, "when physicians will be divided into

two classes—sanitarians and surgeons." Thus we are fast abandoning the active remedies which have been carried to too great an extent by fanatics (and who is there among us whose name, properly enrolled, was not at some time during life found on that same list of fanatics?) and begin to turn our attention to the volume of nature, which, upon diligent research, will amply repay us with the blessings of the law of health, when we shall be able to fully conclude with the redoubted Sir John Falstaff, who, in one of his farthest reaches of repentance, says: "I'll purge and leave sack, and live cleanly, as a nobleman should do." We are no longer groping our way amid the dust and cobwebs of the dead past, but are living in the active, stirring present, with our eyes open to the progressive future, ready to adapt ourselves to the new and better order of things which we hope and believe it will bring. Thus the time has come when the people throughout the civilized world begin to read and think for themselves; to learn things and not words; to exercise their judgments in matters which concern their welfare and that of their families; to inquire not only to learn the cause of disease, but also to search for the true method in nature to prevent it.

Hence, the physician of the present age has need of much and varied knowledge concerning the economy of health, in order that he may give intelligent advice to his trusting patient, as well as freely record and publish his experience to enlighten the profession and aid in establishing facts in science. Thus, we have the voice of Dr. Parks, of England: "It has been proven over and over again that nothing is so costly in all ways as disease, and nothing is

so remunerative as outlay which augments health, and in doing so augments the value of the work done." In conclusion, let me say, with emphasis, that it behooves us, as rational beings to admire the M. D. who sees nature in disease, as we adore the D. D. who sees God beyond sect.

"Not in vain the future beckons,
'Forward! forward!' let us range:
Let the great world speed forever
Down the ranging groove of change."

THE PREVENTION OF YELLOW FEVER.*

BY JEROME COCHRAN, M. D.,
State Health Officer of Alabama.

This question may be discussed under three different heads: (1) To prevent the introduction among us of yellow-fever across the sea from foreign countries. (2) To prevent the transmission of yellow-fever from one part of our own country to another by land. (3) To prevent the spread of yellow-fever in our towns and cities after the outbreak of a few cases.

(1) The methods of maritime quarantine in this country may now be considered as definitely settled. They include the inspection of ships at the port of departure and at the port of arrival, with such detention and disinfection as may seem advisable. The larger number of our seaport quarantines are little more than inspection stations. These are supplemented by a sufficient number of thoroughly equipped refuge stations to which infected vessels are sent for treatment, said inspection stations being under the management of the Marine-Hospital Service. I take some special interest in these refuge stations because they grew out of a recommendation

made by me to the National Board of Health in 1879. In the mean time a few of our large cities have well equipped disinfecting stations of their own, that at New Orleans being probably the most complete and the most efficient in its appointments. I think it may be fairly admitted that our maritime quarantine affords us a considerable degree of protection; and, fortunately, an immense majority of the vessels that come to us from infected ports are themselves free from infection. I should say that nineteen out of twenty of all vessels from infected ports are free from infection, and might be allowed *pratique* without any preliminary detention or disinfection. However this may be, and in spite of all possible quarantine diligence, yellow-fever will sometimes find a lodgment in some of our seaport cities. There is contraband of revenue, and there must be contraband of quarantine. The appearance of yellow-fever in one of our seaports is the signal and the warrant for the imposition of quarantine by land.

(2) The difficulties attending the administration of sea quarantine are many and great; but they are few and small indeed when compared with the difficulties attending the administration of quarantine by land. Land quarantine virtually resolves itself into the quarantine of the railroads; but the railroads are so numerous, they link together the towns and cities of the country in such an intricate network of connecting and intersecting lines of travel, and the travel over them is so rapid and continuous, flowing always, day and night, in never-ceasing currents and counter-currents, that any adequate supervision of them becomes a matter of great perplexity

*Abstract of a paper in the *Sanitarian*.

and magnitude. The principle that underlies the practice of railroad quarantine among us is, that neither persons nor things shall be allowed to leave the infected place. To this end the railroad trains, both passenger trains and freight trains, are prohibited from stopping in or near the infected town, so that nothing can be taken on that is tainted with suspicion; and inspectors are kept on the trains so that nothing from the stricken community can be put off where it is not wanted—neither goods nor persons. This system of railroad quarantine is fundamentally correct, but in the administration of it the most outrageous excesses have been committed. The expenditures have been often so heavy as to be very burdensome to the corporations that have had to foot the bills; and commerce and travel have been interfered with to an extent not warranted by the imminence of the danger. The remedy for these evils is not far to seek. The several States concerned must place the administration of their quarantine laws in the hands of yellow-fever experts, and must give to such yellow-fever experts the power to overrule and supplement the work of non-expert municipal authorities. I have merely glanced at the subject of railroad quarantine, and must hasten on to the principal subject of my paper.

(3) What I want specially to consider is the management of yellow-fever in our towns and cities after the occurrence of a single case, or of a few cases, so as to prevent its dissemination generally through the community; and in my judgment this sort of work depends on principles I now proceed to formulate. I confine myself to towns and cities, because in sparsely

settled country neighborhoods yellow-fever shows very little disposition to spread. It is urban and not rural.

(4) The extent and populousness of the town is an important consideration. The problem is difficult in proportion to the number of inhabitants, and in proportion as residences and business houses are crowded together. In a small, sparsely settled railroad town, where the houses are scattered about at considerable distances one from another, the problem is simple. In a densely populated city it is a problem of great complexity and difficulty.

(5) The golden rule of prevention in yellow-fever is isolation—non-intercourse—non-intercourse with infected places, non-intercourse with infected persons, and non-intercourse with infected things. Don't go near the fire and you won't get burned. Non-intercourse can be enforced in a very simple, very inexpensive, and very effective way. Let the people, with one accord, by common consent, in the exercise of the commonest sort of common-sense, keep away from the infected houses and localities, and refuse to have anything to do with infected persons or infected things. To do this so as to secure absolute safety, it would be necessary for the members of every family to shut themselves up in their own premises, and to enforce a strict domiciliary quarantine against all the rest of the world. But a reasonable degree of safety can be had without resorting to quite such extreme measures.

(6) At the beginning of an outbreak the infection is restricted within very narrow limits—a single house, a block of houses, a single city square; and then it is necessary only to avoid the

infected place or places, and to keep at a respectful distance the persons and things that have been exposed to the infection. Intercourse with other parts of the town is still perfectly safe. And, indeed, at this time a certain amount of intercourse with the infected region is also comparatively safe. You may go into the infected region many times and not take the fever. You may even nurse the sick for a long time without taking the fever. But while all this is true, no communication with the infected region should be allowed beyond what is strictly necessary. The pitcher that goes often to the well is apt to be broken in the course of time.

(7) In small places it would hardly ever be necessary to put guards around an infected house or an infected district. A simple warning to the people should be sufficient. In more populous communities guards may sometimes be desirable.

(8) But the sick must be taken care of—must have nurses and doctors. What must be done with these? The doctor who spends but a little time with his patient is not likely to carry the infection with him into other houses he may have occasion to enter. Still, by possibility he may become a carrier of the infection, and his intercourse with other people should be restrained according to circumstances. The nurse has no need to leave the premises of the patient, and should be kept under the strictest surveillance. When the area of infection begins to extend and cases to multiply, arrangements should be made for the isolation of nurses and of all other persons engaged in taking care of the sick. Take a house within the infected region, or near by, or as many houses

as may be needed, for this purpose. I cannot dilate on this; only let it never be forgotten that the most active agents for the spread of yellow-fever in any community are nurses and doctors and other attendants upon the sick, when they are allowed to eat and sleep in their own uninfected homes or boarding houses; and in dealing with these attendants upon the sick, let it never be forgotten that among all the agencies that have been invoked to prevent the spread of yellow-fever, non-intercourse is the first in importance—is so decidedly first in importance that all the others sink almost into insignificance.

The practice of disinfection is mostly based on hypothetical grounds. But I think we have good reason to believe that it does good. The agents most to be trusted are heat, cold, the mercury bi-chloride, and sulphur fumigation. It is not proven that the yellow-fever poison is connected in any way with the excretions of the yellow-fever patient; but I think the alvine dejections and the urine should be disinfected and disposed of just as we would the excretions of typhoid-fever.

(10.) The probability that a few cases of yellow-fever will spread into an epidemic depends very much on the latitude of the place and the season of the year. It is very generally believed by those who have studied yellow fever, that it requires for its prevalence and dissemination a long-continued temperature of not less than seventy degrees Fahrenheit. It takes some time for yellow-fever to gain a footing anywhere and under any circumstances. It cannot make any considerable headway in less than two weeks, and often it requires a much greater length of time. Yellow-fever

in July or August is much more to be dreaded than yellow-fever in September or October ; and quarantines may be still useful a hundred miles south of an infected town long after there ceases to be any excuse for it a hundred miles north of said town.

(11) When a few cases of yellow-fever occur in a city, the general opinion is that depopulation is the surest way to prevent it from expanding into epidemic dimensions. Take away the fuel, and the fire will soon cease to burn. 'This plan is plausible at first sight, and I do not question its efficacy. But it is attended with so many incidental disadvantages that it seems to me to be the most objectionable plan for general adoption that has ever been devised. It is not very difficult, indeed, to depopulate the infected district so long as it is restricted within narrow limits ; and I believe that depopulation of an infected district may often be the highest dictate of sanitary wisdom. It would be quite possible, also, to depopulate a small town of only a few hundred inhabitants, or perhaps even a city of a few thousand inhabitants. But it would be folly to attempt to depopulate a great city like New York or New Orleans. But there is never any urgent need for the depopulation of small and sparsely settled villages. In them yellow-fever can be managed easily by other methods. And just precisely in proportion as the population increases in numbers and density, just in that same proportion increase the danger of the epidemic and the consequent desirability of depopulation, if that is to be accepted as the proper plan of management. In other words, the more we need the remedy, the greater becomes the difficulty of using it.

(12) With us depopulation, so far as it is accomplished at all, is accomplished only in one way—namely, by the wild and reckless stampede of a demoralized and panic-stricken people. Almost all who are able to go do so, and a great many who are not able. The impecunious are left behind to the mercy of the pestilence and the charity of the compassionate. In the mean time the depopulation is never complete. From one-third to one-half of the people are obliged to stay at home, because they are not able to pay the expenses involved in getting away and living somewhere else. And this is not the worst. These flying people spread panic wherever they go, the panic being far more infectious than the fever ; and then follows an epidemic of quarantines. The big towns quarantine because they have so much at stake ; and the little towns quarantine because they think they have as much right to be protected as their big neighbors. And such quarantines !—unlawful, extravagant, absurd, grotesque, foolish, cruel—in one word, abominable beyond all that words have power to give expression to. If the history of them could be written, it would fill up a goodly portion of that history of human folly which Professor Porson proposed to write in five hundred volumes.

(13) Another agency in the management of epidemics needs to be mentioned here—the agency of refugee camps. *A priori* one would think they would serve a good purpose, but practically they have always been failures, and they must continue to be failures. In the first place, it is next to impossible to get a place for the establishment of a refugee camp. People don't want refugee camps anywhere in the

neighborhood of their residences, and won't have them. In the second place, when you succeed in establishing a camp, it accomplishes comparatively little because you cannot drive the people of the infected town into it; and I don't blame them for their reluctance. If you had the power of a Russian Czar, by force of arms you might drive the people into the camp, but no other way.

(14) I have thus endeavored, in a very brief and imperfect fashion, to indicate what we know of the natural history of yellow-fever, and of the conditions which mark its propagation in time and space. I have, also, in the same brief and imperfect fashion, indicated some of the evil consequences of our present methods of managing yellow-fever epidemics. I need not go further back than the history of this present year to point the moral I have in mind. We have seen the people of the entire South, wild with panic, flying recklessly from their homes, and scattering consternation and dismay all over the country. I suppose there is no other single consideration that stands so much in the way of Southern development as this spectre of yellow-fever which is always associated with our sunny climate in the minds of the people who desire to settle among us. How is all this to be changed? There is but one way. We must educate our people, our doctors, and even our health officials, to a better appreciation of the true character of the enemy we have to battle with. Let it be understood that yellow-fever is not contagious from person to person as small-pox is; that in a majority of instances, when introduced into our communities, it fails to spread at all; that when it does spread, it spreads at

first very slowly, so that the threatened people always have plenty of time to await the progress of events; that if it becomes desirable for the people to leave their homes, there will always be opportunities for them to do so in a systematic and orderly way. In a word, we must manage our yellow-fever epidemics in a common sense, business way. We must get rid of our panics, our stampedes, and our shot-gun quarantines. The guardians of the public health owe it to themselves and to the people they serve to effect such a change in public opinion as will make it possible in the future to avoid the follies which have convulsed and disgraced the country in connection with yellow fever epidemics during the last fifteen or twenty years.

THE HYGIENE OF THE NOSE AND THROAT.

BY DR. CARL SEILER,

Instructor in Larynology and Lecturer on Diseases of the Throat and Nose at the University of Penna.
(Continued from page 122.)

The reader will kindly remember that the vocal cords, those organs in the throat which produce the voice, are two bands stretched across the larynx and set in vibration by the current air coming from the lungs. He will also remember that these cords or bands are stretched by the muscles of the larynx so as to increase or decrease the pitch of the voice. The quality, however, given to the tone both in speaking and in singing is due not to the vibration of the vocal cords themselves, but to the vibration of the air contained in the cavities above; that is, the cavities of the pharynx, mouth and nose. Now it is a fact in physical science that sound consists of a wave motion of the air,

and musical sound requires that this wave motion shall be regular and periodic; as soon as the regularity of this wave motion is disturbed by any cause whatsoever the tone loses more or less of its musical quality. Another fact must be stated here and that is, that the strength of the tone depends upon the number of air particles which are thrown into this wave motion at the same time, while the pitch of the tone depends upon the number of these wave motions in a given time. It will be therefore seen that in order to give more strength and volume to the sound we must increase the volume of air set in vibration, which however does not necessarily mean that we shall use a large volume of air or great force of air current to start the vibration of the tone producing bands, on the contrary, as in the musical instruments, in which we have a similar arrangement for the production of the wave motion, such as the double reed in the bassoon, the lips in the cornet, etc., it is not necessary to use much force, on the contrary every musician will tell us that too much breath will spoil the tone, make it harsh and unmusical. Why therefore should we in singing or speaking use a volume of breath and a force of air current which must necessarily produce a harshness of tone? Why should we call into play the powerful muscle called the diaphragm in order to aid in the production of greater air pressure in the lungs? Why should woman who by nature was not intended to use this muscle, this diaphragm, as the main portion of the bellows, but rather the muscles of the chest and ribs; why should she be taught to use artificial means for producing greater force and spoil the sweetness

and volume of her voice? Furthermore, this increased pressure which we hear music teachers and teachers of elocution recommend and insist upon as necessary for proper vocalization, increases the strain upon the vocal cords and consequently upon the muscles moving them, which strain produces in turn a congestion of the parts which if kept up for any length of time will result in "Chronic Inflammation" and the so called "Clergyman's Sore Throat." There are however still other factors which we must consider as aiding in the production of this common ailment, viz: The transgression of the natural limits of tension of the vocal cords which are termed the registers of the voice. These registers are five in number in the female and four in the male, and should be religiously adhered to both in singing and speaking, for the laryngoscope shows that even a slight transgression of the limits of one of these registers will produce a congestion of the vocal cords. Thus, too much breath, labored and unnatural breathing, transgression of the natural limits of the voice will all produce Chronic Laryngitis, and the only cure which promises any permanent results in such cases is the intelligent cultivation of the voice both in singing as well as in speaking.

(TO BE CONTINUED.)

TO MAKE MILK DIGESTIBLE advise patients to sip rather than gulp it. The fluid will then have a chance to become intimately mixed with the saliva and not miss the first important digestive process. Nature teaches the babe to do this in the ordinary function of suckling, supplying the nutriment in small quantities for that purpose.

HEALTH HABITS OF CAPTAIN ERICSSON.*

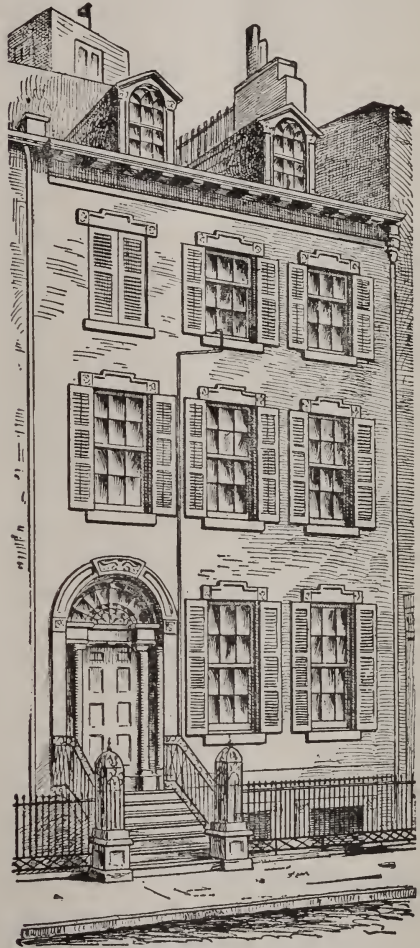
Captain John Ericsson, the inventor of the "Monitor," and one of the most prominent engineers of modern times, is now in his eighty-sixth year. He enjoys vigorous health and a mind unimpaired. He attributes his enjoyment of such remarkable vigor at his age, in his own words, "to the understanding of the machinery of his being, its care, and its needs." The construction he inherited from his



sturdy Swedish ancestors is the first important factor in the question, and regular habits and daily physical exercise are the others. Yet he very seldom goes out. For many years he took outdoor walks, and they were principally in the evening, because in the absence of the dust and noise and bustle of the day he found them more beneficial. He gave up these walks a long time ago when he found that he was not getting the benefit from them

that he had formerly observed. But in a room full of gymnastic appliances, and in the big apartments of his old-fashioned house, he gets sufficient exercise, and there is always plenty of fresh air let in by open windows.

His day begins at seven o'clock in the morning, at which hour he rises the



year around. The first hour is spent in exercising, and a tepid bath followed by a cold shower and a vigorous rubbing, follow it. At nine o'clock he is ready for breakfast. This consists of tea, with a great deal of milk in it, two or three poached eggs, and half a loaf of bread. The bread is prepared

* The very recent death of this famous man will cause the following notes about his life, from the *Herald of Health*, to be read with interest. These notes were published about one year ago.

by a formula of his own, and is a coarse brown bread. It is thoroughly dry before he eats it, a loaf being always disposed on the mantel by the grate fireplace for that purpose. Newspapers and periodicals, many of them being scientific publications, and his mail take up his attention for awhile. Then he gets down to solid work in his individual workshop, the second floor front room. He draws most of his own plans, and is one of the quickest and most finished draughtsmen living. In mechanical work of almost any kind in connection with models and experiments he shows a steadiness of hand, a strength and skill that would be wonderful at any age of life, and are almost miraculous at eighty-five. His calculations are his own, and he shows none of that dependence upon assistants for the drudgery of mathematical work that many great engineers are willing to have. At four o'clock he dines, and the meal consists of vegetables, tea and bread, with about one ounce of meat. It is not weighed or so very carefully limited, but it is very certain that the quantity never exceeds two ounces, and rarely is as much as that. There are no other meals, and there is no more eating. Nothing else passes his lips, unless it is occasionally a drink of water. He uses no tobacco, and never drinks wine, beer, or liquor. He is not fanatical on the point, but goes without them because he thinks they are not good for him.

After dinner he reads an hour or two before going back to his work, though his reading is generally of a scientific or technical character, and in the line of whatever investigations and experiments he has on hand. But when he does go back to work again it is to the

principal work of the day. He prefers the night for real effort. His ideas come more freely, and there is less disturbance of noises from the outside world. At eleven o'clock he stops, at whatever stage his work may be in. It is never with any feeling of being tired, he says, but with the idea of giving his brain a little rest before bed time. This comes at midnight, and means sleep at once, with refreshment and reinvigoration that finds him ready at seven o'clock for another day of the same routine.

THE EFFECT OF TOWN LIFE UPON THE HUMAN BODY.*

BY THE LATE DR. J. MILNER FOTHERGILL,
OF LONDON, ENGLAND.

It is generally recognized that the effect of town life upon the physique is not beneficial, and as the population of boroughs has now exceeded that of the country, the fact becomes one worthy of our attention. The great and rapid increase of large towns at the present time adds to the importance of the subject and deepens its gravity. Of old there were but few large towns, in our modern sense of a "large" town; but Lugol, the great French authority on "scrofula," noted how the population of Paris deteriorated, and how scrofulous were the third generations of persons who came in from the country perfectly healthy. Other observers have noticed the bad effect of town life elsewhere, and the recent researches of Mr. James Cantlie have demonstrated the rarity of a pure-bred Cockney of the fourth generation.

Of old the baron lived in his castle, while the populace lived around in vil-

* Summary of an article in *Nature*.

lages of limited size. For men of all conditions of life the one thing to be coveted above all others was physical prowess. For work, for war, for games, which were largely mimic war, bodily strength was essential. No courage, no skill, could effectually compensate for the want of thews and sinews. Work, war, sports, revels, all too were conducted in the open air.

But civilization brought about changes profoundly influencing the life of the individual. The development of commerce entailed the growth of towns, and then it was found that in the new struggle for existence the battle went rather to the man with the active brain than to the man with a massive framework. The active brain became now the one great thing to be coveted rather than physical prowess. The tendency of town populations is to dwindle, and this dwindling is seen markedly in the feeble digestive capacity of town dwellers. They cannot eat the pastry, the pie-crust, the cakes, which form so large a portion of the dietary of their country cousins. If they attempt these articles of food they give themselves the stomach-ache. Consequently they live on such food as they can digest without suffering—bread and fish, and meat; above all the last—the *sapid*, tasty flesh of animals, which sits lightly on the stomach and gives an acceptable feeling of satiety, so pleasant to experience. The town-dweller, in his selection of food, is guided by his feelings; he avoids what is repugnant to him. Such selection is natural and intelligible, but it is fraught with danger all the same. Consumption and Bright's disease seem Dame Nature's means of weeding out degenerating town dwellers.

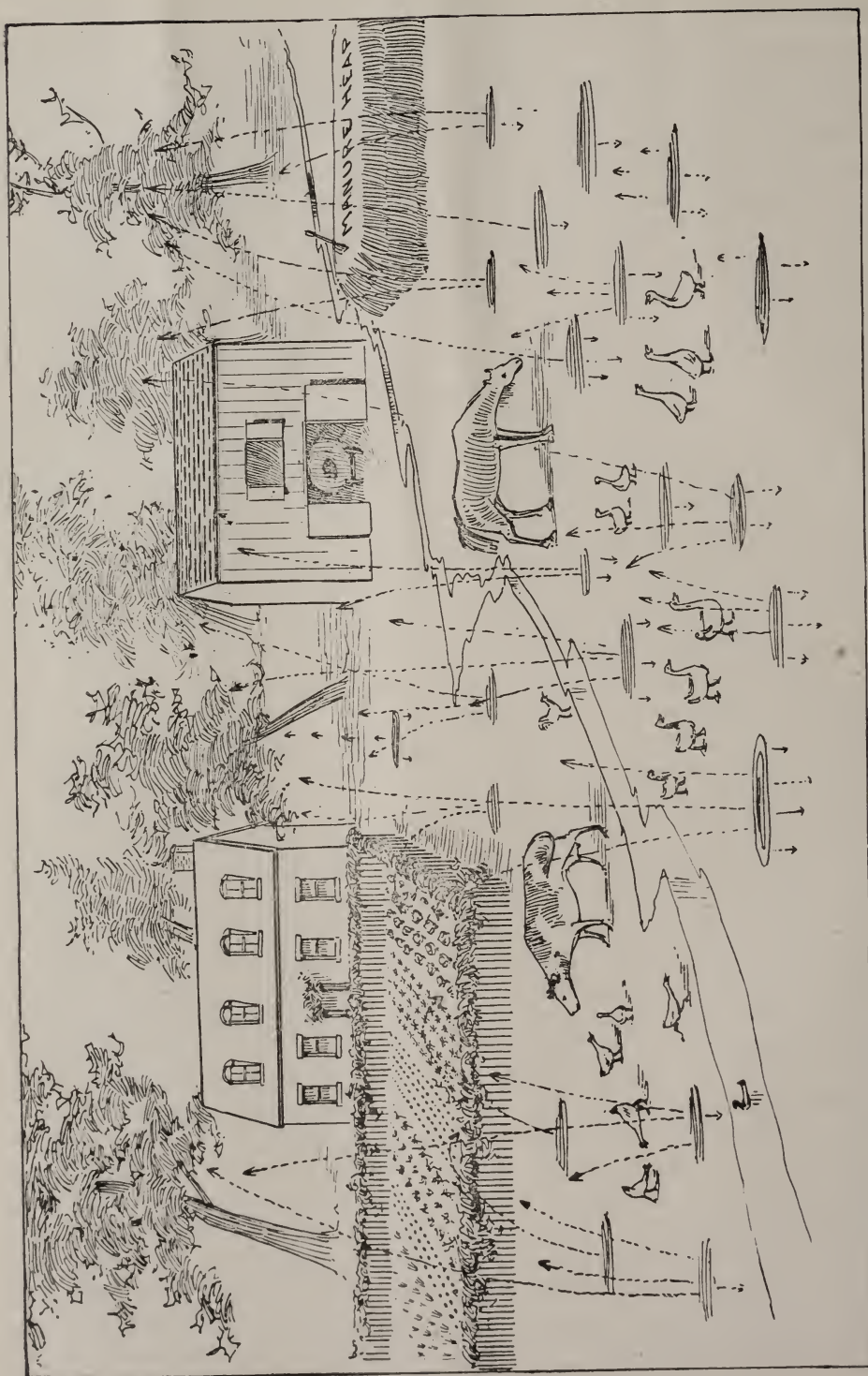
The offspring of urban residents are

another race from their cousins who remain in the country. The latter are large-limbed, stalwart, fair-haired Anglo-Danes, while their urban cousins are smaller, slighter, darker beings, of an earlier and lowlier ethnic form, and resembling the Celto-Iberian race. And amid this general reversion we can recognize a distinct liver-reversion to the early primitive uric acid formation of the bird and reptile. A recognition of these facts must lead to such modifications of the food customs of town-dwellers as are indicated. The spread of teetotalism and vegetarianism tells of a dark groping in the right direction in blind obedience to the law of self-preservation. There must also follow some modification of the existing system of education, for it is by the imperfectly-nourished town child that the weight of the burden of education is most acutely felt.

A NEW DEPARTURE IN THE DISPOSAL OF SEWAGE.

In our last issue we promised to outline a new method of sewage disposal, which we believed to be about perfect, from a sanitary point of view, because it is in accordance with the laws of nature. Believing that illustrations will make this matter plainer than words, we have had the following drawings prepared, which we believe will make the matter more thoroughly comprehensible.

Figure No. 1 will show us how nature disposes of the refuse of the lower animals; we see the gases of decomposition arising into the atmosphere, to be first diluted by the surrounding air and then to be absorbed by the trees and by the vegetables in the garden to which they give life and



through which they *naturally* return to animal life again, thus constituting the *natural* cycle, which we depict on another page.

Figure 2 shows what takes place (more or less) under the *artificial* method of sewage disposal which is found in our cities of to-day. Here we see the refuse of human beings

telligible. We see the warm air from the furnace passing up to heat the rooms, having done which it passes down to a foul air chamber, from which it is drawn both over and under the deposit in the closets, and it then passes up a tall vent stack, to be discharged into the surrounding atmosphere. The upward draft in the vent

FIG. 2.

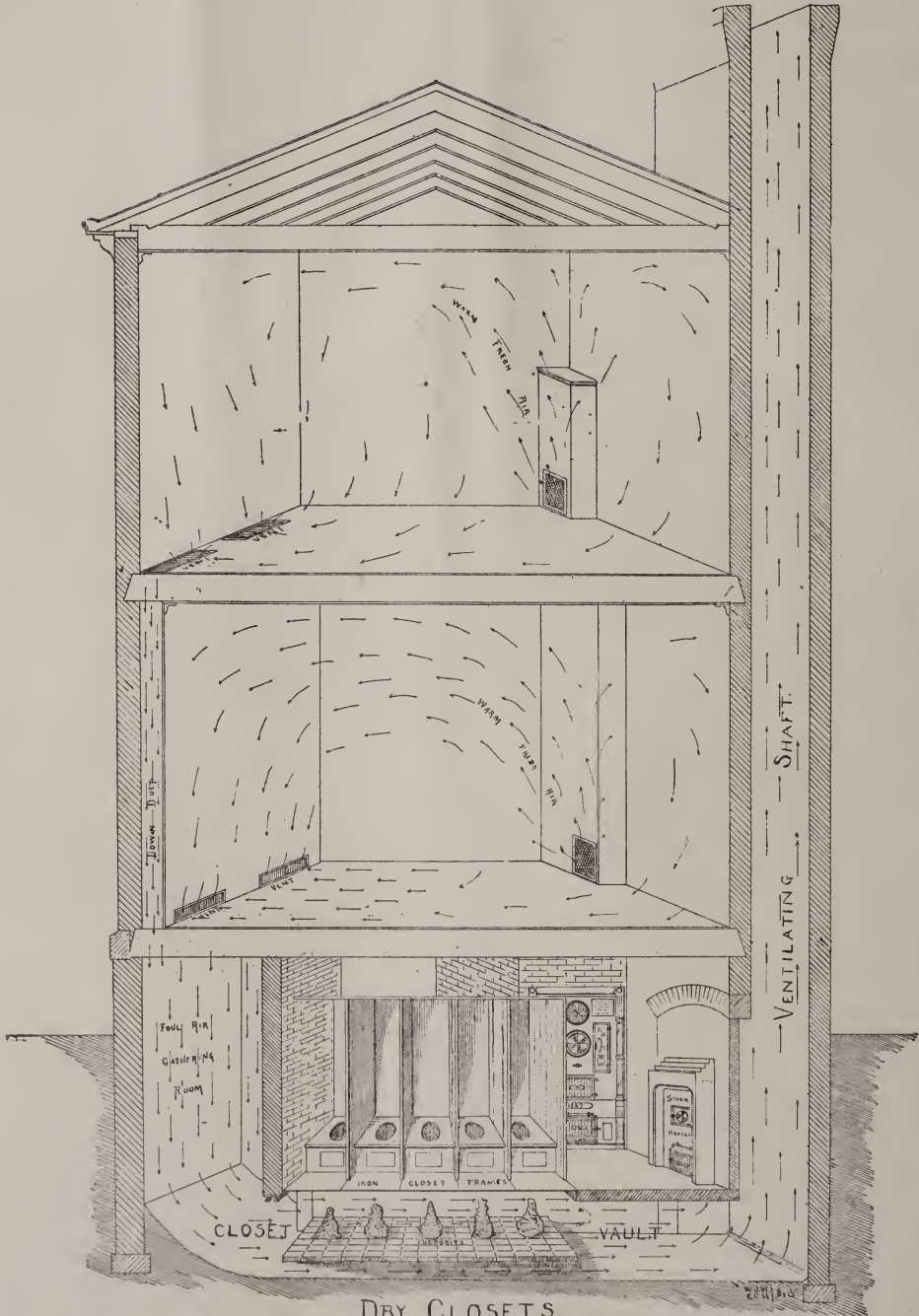


passing into sewers, wherein it putrefies and the poisonous gases of putrefaction are finding their way back into our houses, which they will do, to a certain extent, in spite of the most expensive and most elaborate plumbing.

Figure 3, outlines for us the method now proposed, which, we say, imitates nature. A study of the arrows, which indicate the direction of the air currents will make the details of this plan in-

stack is the agent that causes this circulation of air and this upward draft is maintained by the proximity of the furnace chimney to the vent pipe, heating the air therein, which, when necessary, is supplemented by the heat from a small furnace especially arranged for the vent pipe. This system is not only applicable to large buildings, it may be used equally well in private houses.

FIG. 3.



DRY CLOSETS.

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EDITORIAL.

PALACES OF DIPHTHERIA, ETC., ETC., ETC.

Commenting on "Pasteurism and Hydrophobia," the *Medical Record* of New York, says:—

"We have now a "Palace of Hydrophobia," although rabies claims but a few victims every year. Will not some generous charity soon give us palaces of diphtheria, of scarlatina, of typhoid, and other possible preventable diseases, that still swell our mortality lists to unnatural dimensions."

The "Palace of Hydrophobia," herein referred to, is the Pasteur Institute in Paris, which is now a reality through the really extraordinary munificence of governments and individuals. Many hundreds of thousands of dollars have been subscribed for the establishment of this institute and now the French government has allotted the sum of \$25,000 a year to defray the current expenses of this magnificent workshop of experimental research. This consummation furnishes food for reflection.

Of all the disease whereby the career of man is unnaturally terminated there

is no one that proves fatal to so small a number as does Hydrophobia. For every death from this disease, hundreds, we might say thousands are carried off by diphtheria, scarlet fever, typhoid fever, measles and other similar preventable diseases. Is it because hydrophobia comparatively so rare, the public have such vague, illy-defined and terrible notions of the disease, that they provide so liberally for efforts calculated to eradicate the disease. It is, indeed, only on the supposition that the more mysterious and the less thoroughly comprehensible a situation may be the more attraction does it present to the public, aided by the well-known aphorism that "familiarity breeds contempt," that we can understand this state of affairs.

Very occasionally we hear of a death from hydrophobia (and nearly always the papers graphically portray the sufferings and horror of the death scene) and now we find a magnificently equipped and thoroughly endowed establishment designed to investigate the nature of and tell us how to eradicate the disease. Daily, do the death columns of our newspapers tell us of many promising lives cut short by diphtheria, scarlet fever and kindred diseases; the bare announcement is made; there is no pen-picture of the sufferings of the departed, of the bereaved home, of the everlasting void and aching hearts that are left behind; no mention is made of the probable hundreds of other deaths that will result from the poison multiplied in the body of each death so simply and so briefly recorded. Hence we see no organized effort to investigate the causes and tell us how to eradicate these diseases that are common daily companions. *We know that all contagious diseases are preventable.*

We also know how to prevent them, but that this knowledge may be made available we require the co-operation of every man, woman and child. In other words, in the light of our present knowledge, - that contagious diseases may be prevented, we must destroy their seeds, and to accomplish this, *universal co-operation* is necessary, individual effort will not avail.

We believe that two conditions are necessary for the development of these diseases: 1. The seed. 2. A suitable soil. Either one may exist, but without the conjunction of the two, that is without the implantation of the seed in a *suitable* soil, the disease cannot occur. It is practically hopeless for us to endeavor to destroy the seed; it is possible, but, as we have said, it would require *universal co-operation*, hence it is, *practically*, unattainable. It seems to us that our most promising field lies in the direction of endeavoring to make of our bodies such soil that when the seeds of contagious disease fall thereon, they will not find conditions favorable to their growth, but will die and pass harmlessly away. By a process akin to that of vaccination for the prevention of small-pox, we must so modify the soil of our bodies that the germs of disease will not be able to thrive therein. Vaccination, we are fully aware, has been, like all other good things, abused, but we also know, that where genuine vaccination is the rule, small-pox is the exception. The discovery of the power of vaccination to confer immunity from small-pox, was, we admit, accidental, but it serves, from its practical results to point out to us the direction in which our efforts should travel. If, by altering the soil, we can render the body unsusceptible to small-pox, why can we not, by an analogous

process, render it barren for the seeds of diphtheria, scarlet fever and kindred diseases. We must first ascertain what soil, (what conditions of the body), is favorable for the propagation of these seeds and we must then devise a means by which this soil (these bodily conditions) can be so altered that it will not be thus favorable. These diseases all occur subject to natural laws, and we must penetrate the secret of these laws, just as we have done with so many other of nature's secrets. But how? By experimental research. Just as Pasteur is doing with hydrophobia, so must some one else do with diphtheria and scarlet fever.

Just at the present time, there seems to be an epidemic, so to speak of benevolence in this vicinity. The late Mr. I. V. Williamson has endowed with more than \$2,000,000 a training school for boys; Mr. Wm. Massey gives more than \$100,000 to our "House of Refuge"; and now the great banker Mr. A. J. Drexel lays aside one million and a half of his enormous wealth to found a training school for girls, while, if newspaper reports be correct, Mr. Jacob Tome of Port Deposit, Md., has signified his intention of devoting several millions of dollars to the establishment of a school similar to that proposed by Mr. Williamson. All honor to these noble men, whose names will go down into history as bright examples of how high humanity can soar, of how well human beings can follow the teachings of the Divine Master.

But let us take advantage of this epidemic to ask some of these good men to give us an institute in which we can learn how to fight disease, wherein we can intelligently, perseveringly and *successfully* unravel the problem of *human soil* and disease germs. Let us

have an institute similar to that of Pasteur's, wherein we may investigate the natural laws that govern the occurrence of the more familiar diseases that are daily and hourly saddening our homes and making this bright and beautiful world a scene of sorrow and misery for so many.

NOTES AND COMMENTS.

NEW IDEAS ABOUT THE SURPLUS POPULATION.—A learned and thoughtful traveler, Mr. H. H. Johnson, of England, says *Gaillard's Medical Journal*, solves the vexed question as to what we shall do with the useless classes by saying "eat them." He has been studying the ethics of cannibalism in many barbarous countries, and gives in the last *Fortnightly Review* his conclusions in a style which is replete with information, philosophy and humor. Speaking of the cannibalism to be found in Africa, many parts of Asia, in Polynesia and Australia, he says :

I blame these cannibals less for the eating of the flesh of their own species, which from their point of view is utilizing good food, than for the initial and unpardonable crime of murder. In my own case I know I should bitterly resent being killed, but once dead it would not only be a matter of indifference to me, but it would be a source of actual satisfaction to know that my earthly tenement had found sepulture in the bodily systems of my fellow humans—that my component atoms, or a good proportion of them, had re-entered on active work in society, so to speak, with such a pleasant abruptness, instead of being doomed to absorption by a mixed myriad of lower forms of life. How much more agreeable the

prospect of having one's mortal remains consumed by a restless, enterprising hyena or a soaring vulture (the beautiful Parsi notion) than to languish in the inactive forms of cemetery flowers and evergreen shrubs! It is this consideration which leads me to mention a beautiful and sentimental form of cannibalism now almost extinct, but which prevailed originally in parts of Asia, America, and Africa, where, as anciently among the Issedones of central Asia (*teste* Herodotus) and the Tibetans some six centuries ago, the bodies of those who died were reverently reduced to an edible paste and consumed by their relatives and friends. This practice may not be consonant with our ideas and scruples, but no one can refuse to admit its exquisite pathos and susceptibility for poetic treatment. The loving absorb all that is mortal of the loved one, and the latter in dying has the happy assurance that his or her dissolving molecules will not be scattered to the four winds of heaven, but will acquire new being in the old haunts and amid the attendant circumstances of their former activity. This conception must have proved strangely attractive to the metempsychotic mind of savage and semi-civilized man; but in some countries, and under ruder conditions of life, it lost much of its poetry and assumed a more brutal and practical form. "If," argued pristine and savage humanity, somewhat put to it to find sufficient subsistence, "if it is right and proper and economical to consume the bodies of the deceased, why wait till they die naturally? Why not forestall the inevitable, put them painlessly out of their misery, and reabsorb them into the bosom of the family? So it resulted in a curious

phase of social economy, which prevails and prevailed in parts of Africa, Australia, and Polynesia (more especially in districts where food was scarce), where no old people were seen by the inquiring traveller, who learnt that as soon as they arrived at decrepitude they were painlessly killed and found a ready tomb in the maws of the young and middle-aged members of the tribe.* As the weakly children were also consumed by their parents, the community must have seemed always in a state of vigor, with a society forever in the prime of life.

Although they are never accused of superadding cannibalism to "senicide," still the ancient Sardi as Sardinia regarded it as a sacred and solemn duty for the young to kill their old relations when they were verging on dotage; and several classical authors give us a graphic and in some instances a pathetic description of the old mother, knowing that her time had come, cheerfully and resignedly making preparation for her burial, and when all was ready, the grave dug, the funeral feast prepared, summoning her friends and relatives, and exhorting her weeping son to be of good courage, to strike hard and surely with the sacrificial club, and not to wince because the deed was painful to his filial feelings. Despite the tribal instinct, which among many of the more highly developed birds and mammals prompts a spirit of *camaraderie* and mutual help among the fellow-members of each community, and which intensifies the beautiful unselfish love of parents towards their offspring, we see but little respect or sympathy shown towards the aged and effete, who are either killed and

eaten, or cast out of the tribe and left to starve. In very early human society there was probably no deliberate, organized slaying and consuming of the older, weaker members of the community, but such deeds were sporadic, so to speak, and what the French would call "regrettable incidents." * * *

Cruel as this practice is, and opposed as it may be to the principles which guide our social morality, it is interesting from a philosophical point of view to reflect on the effect it would have on the dispositions of the older members of our civilized communities. If, like certain tribes in west and southwest Africa, or in Australia, it was our custom to immolate and reduce to a kind of sublime Liebig's extract all the aged folk who showed unmistakable signs of failing powers, how preternaturally quickened would become the faculties of our elderly relatives! How they would wax in amiability as they waned in strength! What pathetic anxiety they would display to make clear to their critical kinsfolk how spry and active, how cheerful, willing, and attentive they remained, despite the failing sight, the whitening hair, the stiffened gait! In humble circles, Mrs. Gummidge would cease all reference to the "old un," and though her gaiety might be a little forced, still her unceasing industry and unvarying amiability would long stave off her inevitable doom. And when we ourselves, as our years increased and middle age lay behind us, felt the first warnings of approaching decrepitude, should we not hasten to repair the breaches of time, to foster and retain as long as possible our vigorous juvenility of mind and body? Should we not tend to become Liberal rather than Conservative in our old age, and

* *Vide* Monteiro's "Angolo and the River Congo," "The Races of Australia," and most writers on the Pacific Islands and New Guinea.

so increase in sweetness of disposition and broad-minded charity towards all men that when the inevitable day came when our failing powers could hold out no longer, and a doctor's certificate compelled our reluctant relatives to do their duty, it would be with a feeling of sincere regret that they put an end to our individual existence, and ingested the essential extract of our mortal remains? Perhaps in a more advanced intellectual state than that we are in at present, we might view such a fate, such a culmination to our life and labors with resignation, caring less for individual than collective existence, and, with a rare unselfishness that at present we can only dimly appreciate, sinking our personal interests in the advancement of communal welfare. In a condition of thought like this a conscientious person who felt himself effete would offer himself up for reabsorption by those around him who had not spent their energies. Thus the pension list would be greatly reduced and the community kept at a certain level of vigor. But I confess, being myself still unregenerate, still selfishly attached to all that I call my own, my *ego*, incomplete and unsatisfactory though it be, I am thankful to think that our moral code is based on different lines from those which guide sections of African and Australian society, and which with little doubt were religiously followed by the communities of earliest man.

One view taken, by such cannibals as have a dim idea of a soul, is a curiously negative one—it is thought that by eating a man you consume his soul *utterly*, and so finish him now and hereafter, and that therefore such a consummation is the most awful revenge

you can inflict on your enemy. So when, three or four years ago, there was a tribal conflict at Brass, in the Niger delta, some of the attacked, who were nominal Christians, ate portions of the bodies of those whom they had slain, thinking thus to deprive them of the boon of future existence.

Thus it has often occurred in the past history of Europe and Asia, and in modern Africa, that whereas theoretically a human being is sacrificed to the ogre god or goddess, the victim is really represented by an animal—a camel, horse, ox, sheep, goat or fowl—a descending scale that typifies a waning faith in the efficacy of the sacrifice. During some recent work in west Africa a certain native chief was anxious to prevent my explorations of such creeks and rivers as led to trading districts which he desired to remain unknown. Finding verbal dissuasion unavailing, and not liking to have recourse to physical force, he tried, as a last and somewhat despairing resort, to place supernatural obstacles in my way; so he directed that at the entrance to these forbidden creeks a live white fowl (lowest and cheapest sacrifice) should be suspended from a palm stake. Consequently I was frequently surprised and pleased at what I thought was a graceful token of hospitality posted at different points of my journey, and never failed to turn the fowl to account in my bill of fare. After this manner of disposing of the fowl-fetish had occurred several times, and yet I remained unpunished for my temerity by the local gods, the natives gave up further opposition to my journeys as futile and expensive. In talking this over on my return with one of the more advanced chiefs of the district, my native shook his head half humorously,

half seriously over the decay of religious belief. A white fowl, he said, was "poor man's juju"; a few years ago it would have been a white goat, and in his father's time a white boy (Albino negro), spitted on a stake to bar the way, and this last would have been a sacrifice that might well have moved the local gods of wold and stream to intervene; but a white fowl! *O tempora! O mores!*

Before many years are past, however, cannibalism will cease to exist anywhere, extirpated unhesitatingly by our disgusted civilization. Whether it will ever be revived is fortunately a question rather to be considered a thousand years hence than now, when and if the population of the earth shall have so increased at its present ratio that the statesmen of the period may find themselves confronted by the problem of organizing State-aided emigration to the other planets of the solar system, or sanctioning a certain limited consumption of the effete and unfit by the young and vigorous members of the commonwealth.

THE RELATION OF ILL-HEALTH TO GENIUS.—The present age has a passion for biography, says *Gaillard's Med. Jour.*, and delights to know every detail of the lives of the great men and women who have adorned it and have been gathered to their rest. Among the indirect results of this fashion in literature is the light which it sheds upon the health enjoyed or the ill-health endured by the possessors of distinguished genius. On the whole, the picture is not a bright one. The great thinkers and writers would appear to have had more than a moderate share of human ills, and often to have achieved their best work in spite

of acute physical suffering or profound mental depression. The life of Carlyle is one long fierce fight with the demon of dyspepsia. Darwin was forced, time after time, to suspend those indomitable labors which have changed the face of science and rendered this epoch for ever memorable, in order to recoup his shattered physical energies by rest and change. The life of George Eliot is full of the tale of headache and languor, the struggles of a great spirit with the infirmities of a frail body. John Stuart Mill is another instance of the union of splendid intellectual power with feeble physique, and among living writers it would be easy to mention many more. Is such a conjunction merely accidental, or due to inheritance, or to some imprudent and abnormal mode of life? These questions are sufficiently interesting to detain us for a while.

It might be argued that the prominence of ill-health in the records of genius is simply the result of the fierce light which biography brings to bear upon every detail, and that the physical suffering of eminent men does not exceed that of the average in amount, but only in the publicity which is accorded to it. It might further be urged that men of genius have, as a rule, both heightened sensibility and remarkable powers of description, and that hence the picture of their physical ills becomes unconsciously exaggerated. There is some force in both arguments. Biliousness, when painted by perhaps the greatest master of pictorial description that ever lived (for such was Carlyle), is no doubt a very different malady from what it is when described by unimaginative Jones or Robinson. But, allowing some weight to these objections, it would yet appear that

genius is often associated with physical weakness, and the explanation must lie with one or other of the two latter theories that have been mentioned. Either the type which confers the inestimable boon of intellectual power is commonly associated with feebleness of physical development, or the mode of life adopted by great writers and thinkers is at fault. The former theory, though accordant with many facts, must not be accepted too hastily; and, if in a measure true, is at least happily subject to very numerous exceptions. The records of our universities show that the senior wrangler and the double first are often able to give a good account of themselves in the cricket field or upon the river. Probably in many cases the physical weakness of the intellectually gifted has been the result less of actual congenital defect than of the habits of precocious study and premature development which are apt to be engendered by notable mental superiority. The clever child may become a nervous or dyspeptic man or woman, not necessarily or of course, but because the unwisdom of parents or teachers forces into premature maturity the powers which might be developed without physical injury by timely check and prudent delay. The first duty of a child is to grow, and if this duty be ignored or in any way infringed Nature is absolutely relentless in inflicting her penalty.

Our third theory has doubtless a wide application, as there seems much reason to fear that the habits of the most distinguished brain-workers are frequently inimical to health. The most frequent fault is probably excessive application to work. The writer or scientific worker, if he devotes him-

self wholly to his pursuits, is to a large extent free from those interruptions to labor, those jolts and jars which are part of the fate of professional and commercial life, and which, however disagreeable, are probably in the long run a great safeguard to health. A Newton, a Darwin, or a Carlyle in his study works on hour by hour. The most intense and fatiguing of toils is pursued almost uninterruptedly, food is neglected, and the claims of exercise and sleep are but imperfectly admitted. It would be a miracle if under such circumstances health remained unimpaired. There can be no permanent vigor for brain-workers unless three conditions at least are fairly met. Fresh air exercise must be regularly taken, food must be carefully selected, and sleep must not be unduly curtailed. As regards exercise, some professional authors make the wise rule of taking at least two hours in the open air daily. This is probably a minimum, and might be prudently exceeded. The form of exercise must be left to the individual taste, but riding has always been a favorite mode with the class whose needs we are discussing. The question of food for brain-workers opens up a wide and somewhat debatable topic, but some rules are clear. The brain-worker must live sparingly rather than luxuriously, he must prefer the lighter classes of food to the heavier, and he must be very prudent in his use of alcohol. Tobacco and tea are apt to be favorites with him, and their immoderate use may require to be guarded against. The brain-worker will do well often to go supperless to bed. It is a nice question whether he needs more or less sleep than other men. It might seem a *prima-facie* probability that the hard-

worked brain would need more than the usual quantum of sleep, but it is undoubted that a large proportion of men of genius have been very light sleepers. This was probably in some cases only their misfortune, but there seems some ground for the notion that more than a moderate indulgence in sleep is unfavorable to successful mental effort.

DISEASE COMMUNICATED FROM THE HUMAN TO THE LOWER ANIMALS.—Reading an article in a previous issue from Dr. J. J. Chisholm, of Baltimore, says a writer in the *Medical Record*, giving an account of a case of measles in a dog, contracted from his young master, brought to my recollection a somewhat similar case. The event is very recent, occurring in my practice during the past year.

About four years ago a patient came under my care for treatment for scrofula. The disease at that time had advanced to such an extent that exfoliation of bone from various parts of the body had taken place, especially from ulcers of the scalp, tibia, etc. The bones of the nose were coming away, accompanied by much of the nasal tissue, producing a hideous appearance and offensive in the extreme. The patient was a married woman, no children, fifty years of age. The past two years she was absolutely unable to help herself, confined to bed all the time, and of course a great sufferer. She was very fond of cats, and kept one or two about the bed much of the time during the last year of her life. About fifteen months ago the cat which slept most of the time in bed with her became sick, moped about the room, with swollen eyes and purulent discharge from the nose, sneezing, and soon be-

came a horrid spectacle and finally died, greatly emaciated. While this unfortunate feline was pining away, the patient had adopted another bed-fellow of the same species; in about two months this cat sickened and died precisely as the former, with symptoms corresponding to those of its affectionate mistress and its hideous predecessor. Another was then taken in bed to be carressed and to die in about the same length of time, and with the same symptoms. The husband of this poor woman saw by this time the fatal effects upon the gentle mousers, but not willing that his wife should be deprived of any comfort in his reach, procured another famous "rat catcher" from a negro in the immediate neighborhood, and brought it to the now sinking patient, who soon fondled it into perfect acquiescence, and, as the shadows began to lengthen, it too manifested the same symptoms of nasal catarrh first, then swollen head, purulent discharge, sore eyes, cough, sneezing, emaciation, etc., until November 20th last, the long suffering woman died. That night the cat lay upon the hearth in a sort of comatose state, and lingered until the next day; it expired while the funeral cortege was moving off with the decomposing remains of its late bedfellow. This was the fourth victim in less than thirteen months. In visiting regularly at this house my attention was called to the little animals, as one by one they succumbed to the dreadful malady. Observing the symptoms closely, I can vouch for the truth of this case as one where disease from the human subject was communicated to the lower animal. Dr. Chisholm says, in substance, that while it is a well-established fact that diseases of the lower animals are frequently

communicated to the human race, the converse is not so well authenticated.

MATERNAL IMPRESSIONS.—The cases reported by Dr. R. Gross, of Eureka, Cal., describing the effects of maternal impressions, are not unusual, says Dr. A. B. Leggatt, of Babylon, N. Y., in the *Medical Record*, although they appear to be doubted by some. Practitioners in the larger towns and cities are often called upon for surgical aid in such cases, but it is the rural physician who sees a large majority of them at birth. It is no secret that dentists decline to extract teeth for women while *enceinte*, if they are aware of their condition, for fear of hare-lip in the child. It is also a recognized fact that domestic animals are influenced in the same way. Horse-breeders too often take advantage of that fact, and obtain colts that can be sold as the get of a valuable stallion to which they are not related.

The following cases occurred in my former practice in a farming community during twelve years, and within seventy miles of New York. Mrs. M—, a young farmer's wife, was kicked by a cow that she was milking. Her upper lip was cut entirely through, and one upper tooth was loosened. Six months after she was delivered of a female child with hare-lip. Mrs. S—, a farmer's wife, mother of two healthy children, went into the fields after berries. One shoe—the right one—was run down at the heel, so that she walked all day on the outside of her foot, and subsequently had a swelled ankle. Eight months after she gave birth to a female child with club-foot on the right side.

The following case happened in the practice of a medical brother in the

same town, the subject of which is now a middle-aged man. A farmer's wife went to a spring for water very early in the morning. A huge bull-frog, which lived in that spring, had been on a nocturnal excursion and was returning home. He made his last jump for the spring, but instead landed in the woman's lap. She ran screaming to the house, and remained in an hysterical condition for hours afterward. Nearly nine months after she was delivered of a male child that had a strong resemblance to a frog. His arms stand out from his body and his legs are flexed at the hip and knee, his head is turned back on his shoulders and his eyes are bulging. He walks partly erect with the aid of two canes. Mentally he is quite intelligent.

Any country practitioner can furnish a list of cases like the above, with variations, and his only surprise will be that his city brother has not informed himself on the subject.

MEMBRANOUS CROUP.—Dr. J. F. Kennedy, Secretary of the Iowa State Board of Health, enforces quarantine as rigidly in all cases of membranous croup and diphtheritic croup, so called, as in pronounced diphtheria. He thinks that the practical effect of isolation and disinfection in all such cases would not only restrict the spread of membranous croup, but also lessen the number of cases of diphtheria.

THE Electric Light (arc-light) contains chemical rays which, according to Maklakow irritates the conjunctiva and even the skin. Dr. Maklakow has produced an actual erythema of the skin simply from exposure to the light.

PURER AIR FOR THE SICK-ROOM.—Every careful physician realizes the vital importance of keeping the atmosphere of the sick-room as sweet and pure as possible, yet we believe every one has also found it a most difficult thing to do under many circumstances. A draught of cold air cannot always be permitted, while to be obliged to remain in a room not properly ventilated is at least disagreeable to the attendants, and far from refreshing to the sick. A simple method, undoubtedly resorted to by many physicians, and which all should know about by experience, is to simply moisten a towel or sheet in a mixture of one part Platt's Chlorides in four parts of water, waft or snap this wetted fabric about the room a few minutes and then suspend it to the gas bracket or hook, or from the back of a chair. This solution has no odor, but the strong chemical affinity of the Chlorides for noxious gases is such as to absorb the poisonous exhalations in the room, while the additional equivalent of oxygen given off by the Chlorides adds a most grateful and refreshing element to the air. Repeated three or four times each twenty-four hours costs but little in time or money, and may add just that one element essential to the life of the patient. Platt's Chlorides has been successfully employed as a sick-room or household disinfectant for many years, and is held in the highest esteem by the most eminent practitioners.—*Exchange.*

ATHLETIC SPORTS AND GYMNAS-
TICS AT THE UNIVERSITY OF PENN-
SYLVANIA.—It is stated (according
to the *Med. and Surg. Reporter*) that
the opinion has prevailed among the

medical students of the University of Pennsylvania that it is impossible for them to devote any time to athletic exercises without lowering their class standing and failing in their examinations. But a number of medical students who are in training for the crews have formed an "Oarsman's Quiz Club," and every day, after they have taken their pull, they meet and quiz each other on the subjects which they must prepare upon for examination.

There has been some difficulty experienced in having the department of physical education established on an equal basis with the other branches as regards compulsory attendance and ranking in class. When the department was first introduced at the University it was said that hours would be assigned for gymnasium work just as for recitations or lectures. An attempt was made to introduce this feature into the regular curriculum, but it never succeeded for lack of interest and support in different quarters. Dr. Leuf, the Director of Physical Education, has now succeeded in having regular gymnasium hours assigned to the two lower classes, and it is said that the Trustees are endeavoring to secure a permanent instructor, so that the gymnasium may be open regularly for several hours every day.

"MAN is the most precious capital of the State, and of society in general. Every individual represents a certain value. To preserve this as intact as possible to its furthest limit is not only a command of humanity, but also the duty of every community in its own interests." Prince Rudolph, at the opening of the Sanitary Congress at Vienna.

WELL WATER.—The well on the farm is a source from which comes many diseases. Some wells are never cleaned. When dug they are carefully boarded over, the pumps made tight and snug, with the ground sloping away on all sides, so as to allow the surface water to flow from the opening. There is no well water that is pure. Something depends on the character of the soil. If sandy, and the water will quickly disappear from the surface after a rain, the well will drain the soil for a long distance around it, and the consequence will be that a large portion of the soluble filth of the soil will find its way into the well, although the water may appear sparkling and bright. It is contended that the soil removes all the impurities from the water, but this depends upon whether the soil, by long-continued absorption, be not already so thoroughly saturated with impurities as to refuse to take up more. That the soil does not remove all impurities, even from new ground where a well has been recently dug, has been demonstrated by saturating the surface earth at a distance from the well with kerosene oil, which gradually found its way to the well (having been washed down by the rains) and imparted its odor to the water. If the soil be of heavy clay the danger will be lessened, but on all porous soil the liability of pollution of the water is great. No manure heaps, privies, sinks or other receptacle for filth or refuse of any kind should be within 150 feet of the well—the further off the better. No matter how tight the well may be the toad will sometimes contrive to get in. Many wells contain toads that die and are swallowed in the drinking water unknowingly, under the supposition that the well is

tight and “toad-proof.” Wells should be thoroughly cleaned at least once a year, and especially in the fall. For a distance of ten feet around the well the surface should be cemented, and the pump itself should be cleaned occasionally. Toads, flies, bugs, worms, and even gnats, will get in the water, while only a few drops of a solution from a filthy drain or sink, finding its way into the well, will carry bacteria enough to rapidly multiply and contaminate all of the water. Roots of trees and vines also serve as drains into the wells, as they loosen the soil, and for that reason they should never be planted near the source of drinking water.—*Sanitary News*.

BAD DIET AND NOT OVERWORK.—Mrs. Mary Blake, in *The Golden Rule*, writes as follows respecting the diet of school children: It is a very common and mischievous notion that unless an article of food doubles up a child with colic, or throws him into a fever, within twenty-four hours, it does him no harm. We often see whole families of children who are thin, sallow and nervous. They lose many days of school because they cannot “keep up,” and the parents complain bitterly of “our high pressure system.” They are bilious, or have headache, or “summer complaint,” or they cannot sleep, or they have no appetite. In short, they are sick half the time, or half sick all the time. But suggest to the mother of this family that perhaps her food is not suitable, and she will indignantly answer, “Oh, no! they never eat anything that hurts them.” The blame is laid on malaria, or on overstudy, or nervousness, or delicate constitution, or anything but the real reason. The trouble actually is that

the stomach is doing its hard work on *brain*. Brain and body call for strong, rich blood to build up their rapidly growing tissues, and to replace what exercise and study burn up. But what does the stomach get to make it of?—Greasy meats, with all the life-giving qualities cooked out of them; hot bread, and compounds like it; all kinds of fried abominations, whose original excellence is destroyed by being steeped in boiling lard; rich pies and cake, sweets and candy. All these tax digestion to its utmost, and give little nutriment in return. Poor Jennie starts off to school after a restless night in a room with every window closed for fear of "the night air," with nothing for breakfast but a cup of strong coffee 'to keep up her strength,' and a hot roll. "She never has any appetite mornings." She comes home to dinner faint and hungry, to find roast pork and mince pie, or fried ham and heavy apple dumplings, which her poor, eager stomach takes and tumbles over and over all the afternoon, while her brain labors heavily with the afternoon lessons. A supper with something which tempts, but does not nourish, the tired stomach, finishes the day.

PREVENTION OF DIPHTHERIA.—

Keep away from the sources of the contagion. Do not go where the disease is, if you can help it; and, above all, do not let your children go where it is. Permit no one to come to your home who has been where it is.

From the dwelling and its vicinity banish all sources of filth, whether of the ground, of the water, or of the air. The ground under and around the house, if not naturally dry, should be thoroughly and deeply drained.

Diphtheria does not come from far through the air, therefore do not shut up your house tightly, thinking thereby to shut out the disease. By so doing you shut in the poison of re-breathed air, which paves the way and makes it easy for the poison of diphtheria to claim your children. Let the sunshine in by day and the pure air both by day and night. When diphtheria is prevalent, avoid all crowded gatherings; especially keep children from such places.

What is apparently only a common sore throat in adults will sometimes give rise to an outbreak of diphtheria in children; therefore, in all cases of sore throat, prudence would dictate caution in using dishes which the patients have used. A kiss to a child under these circumstances may be the unconscious seal of the little one's death warrant.

When diphtheria is rife, keep from the children gum, jewsharps, harmonicas and other things which go from mouth to mouth.

Be sure that the drinking water and the milk are pure.—*Maine State Board of Health.*

A POSSIBLE CAUSE OF DIPHTHERIA.

—In the course of a paper read before the last meeting of the Louisiana State Medical Society, Dr. D. R. Fox tells us that during the past four years he has met with several cases of diphtheria which, to him, seemed possibly to be caused by decayed or decaying rice straw. Acting upon this hint, we would suggest that it might bring forth some useful points if physicians were to note whether there seemed to be any constant relation between their cases of diphtheria and any *special* organic decomposition.

PREVENTION OF ALL INFECTIOUS DISEASES.—The science and practice of medicine and surgery are undergoing a revolution of such magnitude and importance that its limits can hardly be conceived. Looking into the future in the light of recent discoveries, it does not seem impossible that a time may come when the cause of every infectious disease will be known; when all such diseases will be preventable or easily curable; when protection can be afforded against all diseases, such as scarlet fever, measles, yellow fever, whooping cough, etc., in which one attack secures immunity from subsequent contagion; when, in short, no constitutional disease will be incurable, and such scourges as epidemics will be unknown. These, indeed, may be but a part of what will follow discoveries in bacteriology. The higher the plane of actual knowledge, the more extended is the horizon. What has been accomplished within the past ten years, as regards knowledge of the causes, prevention, and treatment of disease, far transcends what would have been regarded, a quarter of a century ago, as the wildest and most impossible speculation.—Dr. Austin Flint in *The Forum*.

FLOORS AS CULTURE GROUNDS OF INFECTION. — Several writers have called attention of late years to the possibility of the spaces or filling between badly constructed floors being the source of infection, says the *Sanitary Inspector*, and the experience of Emmerich, of Munich, in one instance seems to justify this idea. In a hospital at Amberg, in certain of the wards, pneumonia had been very prevalent for a long while. Dr. Emmerich was asked to give his opinion

in regard to the cause. An examination of the hospital convinced him that the source of the trouble was in the sub-floor filling, and the finding of the assumed microbe of pneumonia in a sample of the filling which was taken from beneath the floor justified his opinion, to his own mind. The floor of the ward in which pneumonia had prevailed the most extensively was taken up and a new floor and new filling were laid down. Subsequently pneumonia ceased absolutely in this ward, while it continued to find numerous victims in those other wards which had not been repaired. Dr. Schaffer, a regimental surgeon of Vienna, calls attention to the ill-constructed floors of tenement houses, lodging houses, and saloons, especially of the laboring classes, as being the probable cause of a certain amount of preventable disease. The floors in some of these places are washed or sprinkled frequently, and the dirt between and beneath the flooring remains constantly damp, and an excellent soil for the growth of bacteria. His remedy is to impregnate the flooring and the floor filling, in houses of this class, with tar.

INTERNATIONAL CONGRESS OF HYGIENE.—Next summer an International Congress of Hygiene will be held in Paris, and among other subjects, upon which papers will be read and discussions will be held, is the hygiene of childhood; city and country hygiene, including building of dwellings, heating, ventilation, sewerage and drainage, etc.; bacteriology in relation to hygiene; industrial hygiene; international and administrative hygiene; food supply, including drinking water and filtration.

BITING THE FINGER-NAILS.—A novel accident, resulting from a habit of very common prevalence among nervous people, was brought to my notice recently. A young lady complained of a constant irritation in her throat. Two weeks previously she had been taken with a severe "sore-throat," which was treated by a neighboring physician. Under his care, she says, the inflammation quickly subsided, but there still remained a sensation of irritation. Examination revealed a small, flesh-looking object, about the size of a kernel of wheat, adherent to the tissues posterior to the left tonsil by one end. The other parts of the throat were normal. The little mass could not be detached by a cotton-covered probe, but by the use of forceps it was easily removed, and on examination proved to be a piece of finger nail, which had become covered by a cheesy deposit. A broken piece of the nail was also removed from under the mucous membrane at the same spot by a sharp-pointed probe. The patient then confessed to the habit of biting her finger-nails, and, moreover, could remember that a day or two previous to the onset of her throat-trouble a piece of nail which she had bitten off had become lost in her mouth, but after it had caused a fit of coughing she had forgotten all about it until reminded by the discovery.—*Medical Record*.

OUR MINISTER TO SPAIN.—Mr. Palmer, the Michigan farmer who has just been made Minister to Spain is one of the most interesting men in public life, (says the *New York World*.) Here is a picture of him as he is sometimes seen on Broadway, lounging along with a soft black hat on his head

and his hands in his pocket : His big, thoughtful head is set on a short neck ; an iron-gray moustache sets off his swarthy complexion and otherwise smoothly-shaven face. Just above the top button of his overcoat, right in the centre of his snowy shirt bosom, is the live head of a tiny black terrier ! The ex-Senator is very fond of dogs, and in Washington is often seen with one in each overcoat pocket and another peeping out of his vest. He has no children, and, as he and his wife are of an affectionate disposition, their houses in various parts of the country are regular menageries. His famous log-cabin home, "Font Hill," near Detroit, has fifteen rooms and all the comforts and luxuries millions can buy for a farmer. Mr. Palmer is that rare combination—a millionaire and a philosopher. He says it has been his ambition all his life to live in a "log-cabin." Is it any wonder he complains that he "can't keep up his illusions" when he looks from his "log-cabin" out of plate-glass windows?

INGLUVIN IN THE VOMITING OF PREGNANCY.—Dr. Popp, (*Pester med. Presse*, No. 40, 1888,) reports having achieved considerable success with Ingulvin in the vomiting of pregnancy. Having a very obstinate case, upon which he had exhausted the entire resources of the pharmacopœia, he administered three times daily, one-half hour before mealtime, eight grains of Ingulvin, and directly afterward two tablespoonfuls of one per cent. hydrochloric acid solution. A improvement was observed after a few doses had been taken, and a cure effected after the treatment had been continued for three weeks.—*Deutsche med. Wochenschrift*, January 17, 1889.

CYCLING.—Cycling as a curative agent (says the *Medical Record*) has a considerable future ; it ought not to be taken up at too early an age ; the so-called “bicycle back”—round, stooping shoulders—is particularly liable to be produced in a growing lad who uses the bicycle too much ; a convenient rule is to avoid recommending it till a lad has passed the age when the chief growth in height takes place. Dr. Jennings’ book confirms the impression formed from observation and the perusal of scattered notices in fugitive literature, that cycling is a form of exercise specially useful to men who are growing to be a little more than middle-aged. A man who has followed a sedentary occupation begins to experience increasing disinclination to exertion, chronic constipation, with some stiffness and it may be flying pains in the joints ; for such a man a tricycle is capable of accomplishing a great deal ; exercise ceases to be a trouble, the bowels become more regular, and the joint troubles, which may be at first a little aggravated, disappear. Dr. Jennings believes that chronic gout and rheumatic gout may thus be cured, or at least kept at bay, even when the patient has been seriously crippled by several attacks ; he also speaks very confidently as to the cure of obesity, if the patient will refrain from gratifying the thirst, which is at first very trying ; he even finds some reason to believe that his favorite exercise may be a useful adjuvant in the treatment of early consumption.

THE AGENCY OF DRINKING WATER IN THE CAUSATION OF CHOLERA.—In a report of Chief Engineer F. G. McKean, U. S. N., on the Takashima coal mines of Japan, reference

is made to the means taken to prevent cholera by the use of distilled water. He reports that until the last year cholera appeared regularly on the island (Takashima), and made great ravages in its dense and peculiar population. It is stated that during ten days of 1885, nine hundred persons died of the disease, so that it became necessary to construct special furnaces for burning the dead. It was suspected that the germs were in the water brought from the main land for drinking purposes, and hence the distillers were put in operation, and stringent orders issued that the water from the main land was only to be used for washing purposes. Last year there were no cases of cholera on Takashima, though it raged on the neighboring islands, and the immunity is affirmed to be due to the purity of the drinking-water.

THE CAPE MAY ATHLETIC ASSOCIATION.—We are glad to learn that this Association, under the energetic and fostering presidential care of the Hon. John E. Reyburn is prospering and gives promise of many attractive events for the coming season. Senator Reyburn takes great interest in this association, and those who know what an indefatigable worker this genial gentleman is when he is interested, can readily comprehend the secret of the success of the Cape May Association. Let other resorts endeavor to interest men of similar calibre.

“YOUR name, my child?” inquired the matron of the poor little waif that had applied for charity. “Mary Haddel.” “Little lamb!” feelingly exclaimed the tender-hearted matron. —*Chicago Tribune*.

THE NEW GOSPEL OF HEALTH.—From the *Health Journal* we learn that in a special sermon preached in Ottawa some time ago by the Rev. Mr. Carson, the Rev. gentleman said: "I call it the new gospel because it is a part of the revelation contained in the Testaments of God; and because, as a practical science it is yet scarcely half a century old." "My object in bringing the subject into the pulpit and making it a part of my teaching is to show that it is a part of the gospel which I preach, and is included in the scheme of Divine government as given to us in the Holy Book." "We must teach that sanitary science is as much a law of God as the ten commandments; and that obedience will bring reward and disobedience punishment." Why cannot there be much more of this sort of preaching? why not a sermon on the subject once a month by every minister of the gospel? They would promote better living, temperance and greater ability in communities for good.

IMMUNITY OF LIME BURNERS AGAINST CONSUMPTION.—Papers on this subject recently appeared in the *Berlin Klin. Wochensh.* (39, 38, 88) from the pen of Dr. L. Halter, of Langerich. He has remarked during his residence at Langerich that although consumption is very prevalent in the general population of the neighborhood, the men engaged in removing the lime from the kilns are exempted from its ravages. Having satisfied himself as to the accuracy of his observations, he sought for the agents that prevented the development of the disease. These seemed to him to be a dry place of occupation, the inspiration of dry, frequently hot air (41 to 70c.),

and lime dust in rather large quantities. The lime dust he believed to be neither beneficial nor injurious, but perfectly indifferent, the great factor was the inspiration of very dry hot air.

ADULTERATED COFFEE.—If one will buy substitutes for coffee, says *Public Health*, here are a few rules which will enable you to tell how much is coffee and how much something else. *Chicory*, a dried, roasted and ground root, often mixed with a little caramel, (burned sugar,) is the commonest substitute. Carrots and other roots, peas, beans, and a great variety of other things, are also used, it is stated. Pure roasted and ground coffee, is solid, gritty, and a little oily to the touch; it will float on the surface of cold water. *Chicory* and some other substitutes sink very soon, leaving a dirty brown streak of color. Examine the coffee-grounds—you will find the coffee still quite hard and dark; *chicory*, beans, etc., soft, and more or less bleached out. It will be seen that both coffee and tea, owe their fragrance, flavor and value, largely, to the volatile oil which is developed in the process of curing of the tea and the "browning" of the coffee. Hence, both should be kept in close packages—nothing better than a fruit-jar. Their preparation should be by infusion with hot water rather than by boiling.

THE secret of the success of Dr. S. Weir Mitchell is given by Dr. William Osler in the *Canada Lancet* thus: "A naturally keen intellect, a profound knowledge of human nature, particularly of the frailer portion of it, and living faith in the value of the *dietetic* and *hygienic measures in the treatment of the sick.*"

WATER SUPPLY AND DISEASE.—

In pursuance of an investigation of the subject of typhoid fever and other diseases in this city, (says Dr. Charles M. Cresson.) I have obtained information from other sources, and among them from the health departments of several cities the ratio of deaths from typhoid fever to population during the past four years, and among them the following :

	—One death in—				
	1885.	1886.	1887.	1888.	'88*
New York, . .	4,752	4,491	4,656	4,243	23.5
Baltimore, . .	2,691	2,871	2,802	3,107	32.2
Boston, . . .	2,612	2,693	2,186	2,441	40.9
Chicago, . . .	1,270	1,458	1,989	2,213	45.1
Philadelphia, .	1,563	1,580	1,610	1,307	76.5

*Deaths in each 100,000 population.

The death rate from typhoid fever in Philadelphia is the highest of any one of these cities. It is 30 per cent worse than the worst in the table, and 200 per. cent worse than the best. The number of deaths in Philadelphia from typhoid fever in 1888 was 783. Careful observation has shown a positive connection between the cases and deaths from this disease with the condition of the water supply.

Whatever may be the exact cause of the disease (whether bacteria or not) its mildness or severity is evidently connected with the rise and fall and carriage of material by our water supply. If the death rate from typhoid fever in Philadelphia could be reduced to that of the city of New York there would be a diminution of over 2000 cases of sickness and over 500 deaths in the annual summary of typhoid fever.

DEATH BY ELECTRICITY.—A bill has been introduced in the present session of the Alabama Legislature to put criminals to death by electricity instead of by hanging.

ATHLETICS AT SWARTHMORE.—

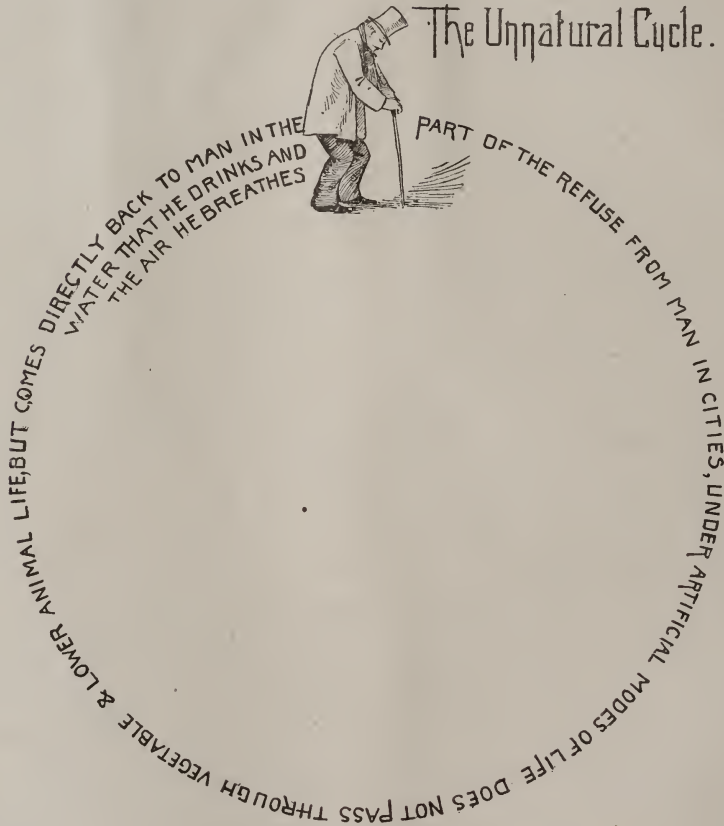
Dr. Shell recently addressed a meeting of the young men of Swarthmore College on the training of athletes. After remarks on each specific branch of college athletics, with advice and directions as to how to train for each, the Doctor spoke as follows in regard to dieting and general training.

"In regard to dieting, it is too early to make any restrictions except that no 'pie' is a necessity. The meals must be taken with exact regularity, and too much must not be taken at one meal. Coffee must be cut down to a maximum of one cup a day, and two goblets of water per diem is generally enough. Rice and tapioca pudding may occasionally be allowed. Tobacco in all forms must be stopped at once—no weaning, but stop right now. The sleep must be regular and 10.30 is the latest to go to bed ; get up early, but seven hours sleep the athlete must have."

THE "BELLY BAND" FOR NEW-BORN."—Dr. Ady (*Pacific Medical and Surgical Journal*) believes that the "belly band," however made, is a relic of barbarism—uncomfortable and mischievous, often causing and never preventing hernia. The inguinal region is the weakest part of the abdomen. Instead of protecting this the band, on the contrary forces the intestines down into it. Even if the umbilical opening has not properly closed, the pressure of the band about the circumference of the body will only crowd a knuckle of intestine into the aperture and effectually keep it open, instead of allowing it to close, which it will generally do if left to itself. He would, therefore, advise that all bands, skirts, etc., that punish the baby be left off.

THE net debt of the city of Berlin is but little over \$4,000,000; that of New York is over \$100,000,000. The former is moderately taxed, clean, well built and excellently governed; the latter outrageously taxed, filthy in the extreme, and badly governed. Why?

YELLOW FEVER is stated to have broken out at Versailles, and to have numbered thus far four victims. It is suspected that the disease has been imported from South America by means of parrots, whose plumage may have harbored the contagion.

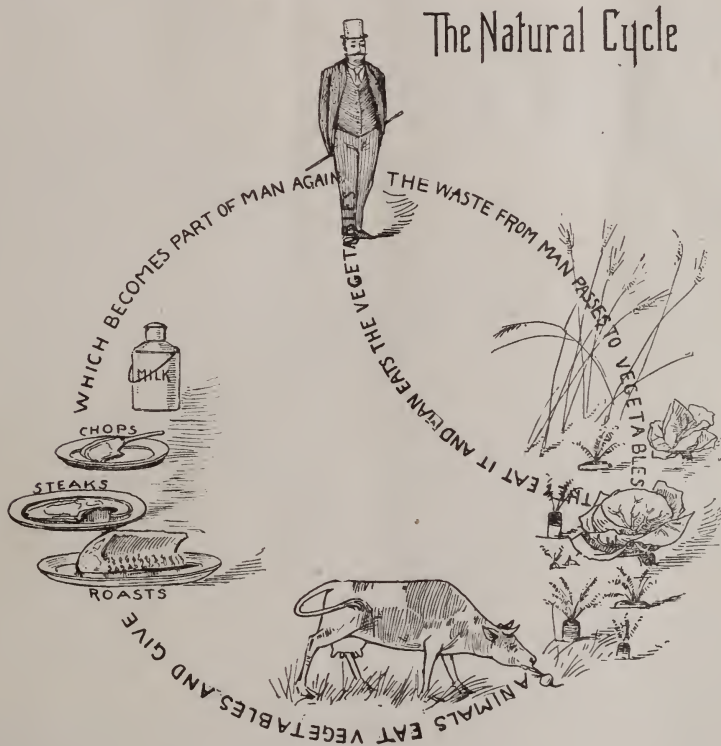


A MINISTER OF PUBLIC HEALTH FOR FRANCE.—The Sanitary Department in France was formerly attached to the Ministry of Commerce. This was natural when French sanitation was confined to enforcing measures for preventing the propagation of epizootic diseases. This connection has recently

been severed, and the Sanitary Department has been attached to Assistance Publique of France. M. Monod (whose reputation as an enlightened sanitarian is established throughout Europe) has been nominated by presidential decree director of the two services, with the title of Director of the Health Service.

EXPENDITURE OF MUSCULAR FORCE IN DANCING.—The *Sanitary Inspector* tells us that it has been estimated that, in a single night of the ball of the great opera at Paris, the two thousand persons who participate in it expend an aggregate muscular force which is

equal to 500 horse power. This would suffice to drive a ship of 1800 tons burden nearly forty miles. After such a forced muscular expenditure as occurs in dancing it is no wonder that immediately afterwards many who participate need to recuperate.



TO AVOID INFECTION a Doctor recommends, in the *British Medical Journal*, his fellow practitioners to have small pads of cotton batting, with light tapes attached, tied over the mouth and nose, to prevent the entrance of infections on visiting infected patients; to be burned when taken off. A good practice, which any one forced to go near a case of infectious disease might wisely and easily adopt.

A HINT FOR LIFE INSURANCE EXAMINERS.—If Life Insurance Medical Examiners, instead of hammering at a man's chest to learn if he has a tendency to any disease, an exchange aptly says, would enquire if he has a cesspool leaking into his well, or an untrapped pipe beneath his closet, they might save some losses to their companies and benefit the public as educators.

TYPHOID FEVER IN PHILADELPHIA.—In our illustration of the "Water Supply of Philadelphia," we say that Philadelphia has the highest typhoid fever death rate of any city in the country. Since this drawing was made we have learned that we were not strong enough in this statement and that we must credit our city with the highest typhoid death-rate of any city *in the world*. It must be evident, to any unprejudiced person, that the Schuylkill River as a water supply is a dismal and disastrous failure.

DRINKING OUR ANCESTORS.—We have had occasion from time to time to chronicle some of the delectable ingredients that are to be found in Schuylkill water, such as oil of cedar, which we believed was derived from the cedar coffins in Laurel Hill Cemetery. Now we have to tell of the most startling and latest discovery that we have from such unquestioned authority as Dr. Charles M. Cresson, who has been systematically examining this water for many years past. This gentleman has actually discovered the presence of "*adipocere*," which, to the uninitiated, we would say is a waxy substance formed from the decomposition of the fat of animal bodies. Thus then, having the fact from undoubted authority we can no longer question that the bodies of our ancestors, decomposing in Laurel Hill, on the banks of the Schuylkill, are draining into the river, to be imbibed by the people of Philadelphia.

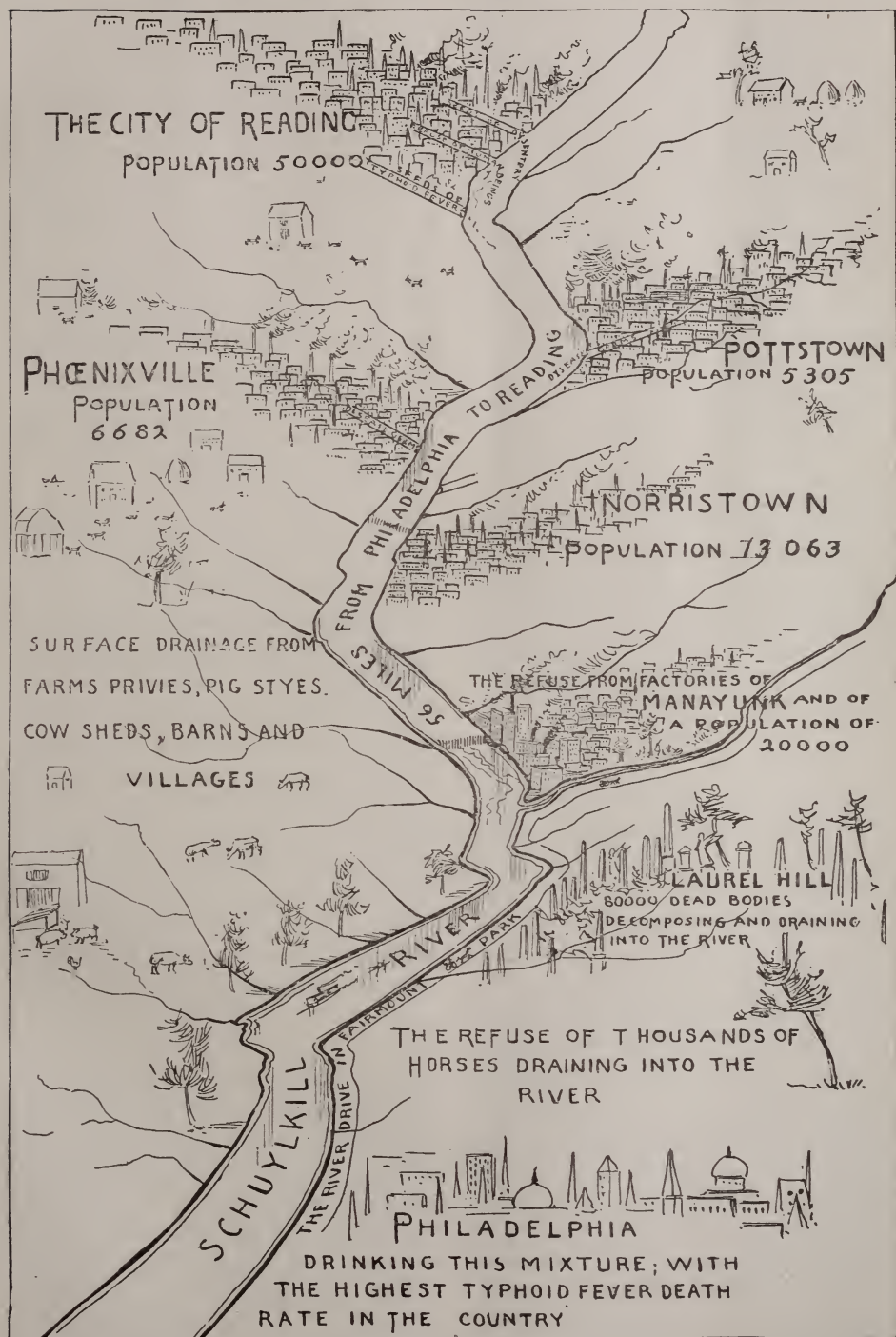
INSIDIOUS EFFECTS OF IMPURE WATER.—The last report of the New Hampshire Board of Health mentions the case of a professional gentleman and his wife, both of whom had suffered for months with dyspepsia, head-

aches, backaches, muscular pains, and general languor, and who immediately regained their health upon abandoning drinking water from the family well, which they supposed to be of excellent quality, but which was found upon examination to be badly polluted by drainage from an adjacent farmyard. It is not improbable that many persons suffer from similar symptoms produced through a like agency.

DOCKS OF PESTILENCE.—Dr. Moreau Morris, Sanitary Inspector, has reported a dangerous detention of putrescible refuse under the pile-supported piers of the city of New York, and consequent accumulations of disease-breeding filth in the docks. The results are visible in typho-malarial and other fevers among the men employed about the wharves. Nothing will mend the mischief but a system of respectable stone piers and wharves in place of the miserable structures that disgrace the chief city of the western world. Meanwhile, it is recommended to make the occupants of the docks keep them cleared out by dredging.

CONSUMPTION FROM CONTAGION.—At the meeting of the Finnish Medical Society, at Helsingfors, Mr. Runeberg reported a case of consumption undoubtedly caused by contagion. The patient was a peasant, thirty-nine years of age, who had an untainted family history, and showed in his own constitution no tendency to phthisis. Two years ago he was in perfect health; but the symptoms appeared a little after the death of his wife from consumption. He had occupied the same bed and nursed her during an illness of several years.

THE WATER SUPPLY OF PHILADELPHIA.



LET THE WATER CIRCULATE.—Many devices are suggested by plumbers for guarding against the danger of house traps being emptied by evaporation or siphonage while the houses are closed for the summer, and thus allowing the escape of noxious gases into the dwelling. Some go as far as to say that there is no safety short of disconnecting the fixtures and securely closing the ends of the pipes. Others recommend shutting the water off and filling the closets and traps with oil or glycerine, while still others favor an adjustment of the valves so that there will be a continual dripping of water. One of the most sensible suggestions we have seen is made by the *American Artisan*, which is that where a house is to remain closed for some time the best plan is to arrange for some one to go into the house once a week or so, let the water circulate throughout the house, and take a look around to see that all is right.—*Boston Budget*.

CREMATION OF DE MURSKA AND HER DAUGHTER.—The bodies of Mme. de Murska and her daughter were cremated at Gotha on January 23d. Mme. de Murska's Austrian husband and a dozen members of the Gotha Opera Company were the only mourners. The urn containing the ashes of the mother is inscribed: "These ashes are all that remain of a nightingale." The urn containing the daughter's ashes is inscribed: "The woman whose remains lie here has battled and suffered much in vain."

The bodies of the mother and daughter were placed in a cemetery outside of Gotha. A single wreath of laurels, a gift from the daughter, adorned the mother's coffin.

A PROPOSED NEW LABORATORY AND GYMNASIUM FOR THE HARVARD MEDICAL SCHOOL.—At a special meeting of the faculty of the Medical Department of Harvard University, held on February 23d, it was announced that Dr. Henry F. Sears had offered to present the school with \$40,000 for the purpose of erecting a pathological and a bacteriological laboratory. The matter was referred to a special committee. The plan proposed is to build a two-story annex to the present building, one story to be devoted to pathology and the other to bacteriology, and to fit up a gymnasium for the students in the basement.

CURE FOR COUGH.—A Baltimore physician, connected with an institution containing many children, says: There is nothing more irritating to a cough than to cough. For some time I had been so fully assured of this that I recently determined, if possible, for one minute at least, to lessen the number of coughs heard in a certain ward in the hospital of the institution. By the promise of rewards and punishments I succeeded in inducing them simply to hold their breath when tempted to cough, and in a little while I was myself surprised to see how some of the children recovered entirely from their disease.

WELL WATER.—We have been asked by a subscriber in Ohio to give some directions whereby one can test well water to ascertain whether it is wholesome or not. We have laid this question before the distinguished chemist, Dr. Charles M. Cresson, who has promised to give us an article on the subject, which we hope to publish in our next issue.

PURIFIED WATER.—The boiling of water to "kill the microbes" (*Arch. de. Phar.*, October 5, 1888,) has sometimes been recommended by physicians. M. Tellier has shown that this cannot be effected by a temperature of 212° F. He also observed that boiled water, being deprived of its air, is heavy and indigestible, and that, through loss of its calcareous salts, it becomes insipid, and is disagreeable to drink. He prepares water in a closed vessel, placed in a salt and water bath, by which he gets a temperature of 300° F. In using, the water is drawn from a filter-faucet near the bottom of the vessel. A small faucet at the top, to admit air, is kept covered with cotton.—*Amer. Jour. of Pharm.*

RATS AS SCAVENGERS.—The following up of rats of civilization is not the evil, perhaps, it has been regarded. The most superficial observation demonstrates the fact that rats are our best scavengers. They consume all animal and vegetable waste alike of the mansion and hut. It is said that the visits of the plague to Western Europe and Britain have ceased from the time when rats became so plentiful. The sagacity of the brown rat, which has, by the way, supplanted the black species in this country, is indeed remarkable.—*Texas Health Journal.*

THE QUERY, "What Makes Baby Cry So?" which is discussed by Dr. Patton in BABYHOOD, recalls the question once asked by the late John G. Holland, "What does baby think?" to which some ribald made reply that the baby thought what the Governor of North Carolina said to the Governor of South Carolina: "It's a long time between drinks."—*American.*

THE NEED OF ARM EXERCISE;—Walking is a poor substitute for arm exertion. The reason is partially plain, since walking requires little attention, much less volition and separate discharges of force from the brain, than is the case with the great majority of arm movements. The arm-user is a higher animal than the leg-user. Arm motions are more nearly associated with mental action than leg movements. A man's lower limbs merely carry his higher centres to his food or work. The latter must be executed with his arms and hands.—*Popular Science Monthly.*

FLORIDA STATE BOARD OF HEALTH.—Florida now has a State Board of Health. The recent special session of the Legislature (called for that purpose) has passed a bill creating this Board, to be composed of three members, to be appointed by the Governor.

HERBERT SPENCER says: "The first requisite to success in life is to be a good animal; and to be a nation of good animals is the first condition of national prosperity."

CORRESPONDENCE.

A BOROUGH COUNCIL FAITHFUL TO ITS TRUST—AN EXAMPLE WORTHY OF IMITATION.

To the Editor of The Annals of Hygiene.

In contrast to the many instances which come under the notice of the State Board of Health of entire disregard on the part of Borough authorities of the important responsibilities devolving upon them by law as guardians of the lives and health of their citizens, it is refreshing to be able to

note the prompt and vigorous action of the Burgess and Town Council of St. Petersburg, Clarion County, in this State. Diphtheria having obtained a foothold in the town, and several fatal cases having occurred, the Council adopted the following ordinance, and also applied to the State Board for a sufficient number of precautionary circulars against Diphtheria to enable them to place one in each family. Such courageous and intelligent action cannot be too highly commended.

BENJAMIN LEE, M.D.,
Secretary State Board of Health.

ORDINANCE.

BE IT ENACTED AND ORDAINED, by the Burgess and Town Council of the Borough of St. Petersburg, and it is hereby enacted and ordained by the authority of the same, that it shall be unlawful and strictly forbidden to hold any Public School, Church, Sabbath School, Singing School, or any public gathering whatever in any Public Hall, or upon the streets of the Borough, during the prevailing disease,

DIPHTHERIA,

until the resident physician of the Borough pronounces it perfectly safe to repeal this ordinance. And it shall be the duty of the High Constable to see that this ordinance is strictly enforced, and to place a

DIPHTHERIA NOTICE

upon any residence where that disease prevails, and any person or persons violating this ordinance, or molesting or destroying any diphtheria notices posted up by the High Constable, shall be subject to a fine of not less than \$5, or more than \$10, said fine to be collected in a like manner as all other fines for violating Borough ordinances.

And it is hereby requested by the Council that all parents keep their children at home as much as possible, and forbid their visiting any house or congregating with any members of any family where Diphtheria prevails.

And it is further requested that the citizens thoroughly disinfect their water closets or outbuildings, and remove all rubbish from their yards and alleys, and keep the same in clean condition.

By order of the Council,

Attest : JOHN MORGAN,
CHAS. O. DUVE, *Clerk.* Burgess.

Dated at St. Petersburg, this 1st day of March, A.D. 1889.

STATE BOARD OF HEALTH AND VITAL STATISTICS, OF THE COMMONWEALTH OF PENNSYLVANIA.

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PLACE OF MEETING,

Supreme Court Room, State Capitol,
Harrisburg, unless otherwise ordered.

TIME OF MEETING,

Second Wednesday in May, July and Nov.

EXECUTIVE COMMITTEE,

PEMBERTON DUDLEY, M. D., Chairman.

HOWARD MURPHY, C. E.

JOSEPH F. EDWARDS, M. D.

BENJAMIN LEE, M. D., Secretary.

Place of Meeting,

(Until otherwise ordered).

Executive Office, 1532 Pine St., Philad'a.

Time of Meeting,

Third Wednesday in January, April, July
and October.

Secretary's Address,

1532 Pine Street, Philadelphia.

Bureau of Registration and Vital Statistics.

Department of Internal Affairs,

State Capitol, Harrisburg.

*State Superintendent of Registration of
Vital Statistics.*

BENJAMIN LEE, M. D.

SPECIAL REPORT.

MINUTES OF A SPECIAL MEETING OF THE STATE BOARD OF HEALTH.

A special meeting of the State Board of Health was held, on the call of the President, at the Supreme Court Room, Harrisburg, at 10 A. M., Wednesday, February 27, 1889, Dr. Engelman presiding. There were present Drs. Engelman, Dudley, Groff, McClelland, Lee and Mr. Murphy. The Secretary presented bills, representing vouchers No. 249 to No. 266, and amounting to \$818.27, which had been audited by the Executive Committee. They were, on motion, approved. The Secretary stated that Dr. Edwards had called at the Executive Office and explained that it would be out of his power to attend. Attention was then called to the following bills, which had been prepared with a view to their introduction into the present Legislature:

First. "An Act to repeal certain clauses of an Act entitled 'An Act to establish a State Board of Health for the better protection of life and health, and to prevent the spread of contagious and infectious diseases in this Commonwealth.'"

The clauses referred to are those limiting the expenditures of the Board, and which make any increase of appropriation impossible as long as they remain on the Statute book.

The bill was approved for presentation to the Legislature.

Second. "An Act to provide for the current expenses of the State Board of Health and Vital Statistics for the year commencing on the first day of June, Anno Domini One Thousand Eight Hundred and Eighty-nine, and also for the year commencing on the first day of June, Anno Domini One Thousand Eight Hundred and Ninety."

This bill asked for an appropriation of \$15,200 for the two years, of which

\$5000 should be devoted to sanitary inspections, chemical analyses, etc.

On motion it was amended, increasing the latter item to \$8000, and the aggregate to \$18,200, and as amended was approved.

Third. "An Act to enable the State Board of Health and Vital Statistics to discharge certain duties assigned to it by law."

This bill provided penalties for violation or neglect of the orders of the Board, authorized the President and Secretary to administer oaths, made the expenses of the removal of a nuisance a lien on the property, authorized the appointment of two additional clerks for registration purposes in the Department of Internal Affairs, and made Prothonotaries and Clerks of Orphans' Courts registration officers of the Board, to be compensated by the County Commissioners.

It was approved as read.

Fourth. "An Act to promote the purity of water supplies of cities, towns, boroughs and villages, 'calling for the filing of plans and surveys of all new water-works with the Secretary of the Board.'"

It was amended in such a way as to provide for the extension of distribution and for ordinary repairs without such formality, and as amended was approved.

Fifth. "An Act to prevent the deposit of carcasses of animals or other noxious matter in certain waters in this State, or upon the surface of any road, street, alley, vacant lot, public ground, market space or common, and providing for the abatement of the nuisance occasioned by such deposit, and the punishment of violation of this Act."

Certain explanatory and verbal amendments were proposed and passed and the bill as amended was then approved.

The Board then, on motion, adjourned, to meet again in the same place at 3.30 P. M.

The subject of sanitary organization of the State was then introduced and discussed.

Pending the discussion the Secretary announced that a communication had been received from the Hon. W. McKnight Williamson, chairman of the Senate Committee on Public Health and Sanitation, appointing the hour of 4 P. M. for a conference of the Board with that committee.

A recess was accordingly taken for that purpose, and the various needs of the Board were laid before the Committee, each member of the Board presenting some special point.

The reception of the Board by the committee was extremely courteous, and their remarks were listened to with much attention.

The Board being again called to order four plans for sanitary organization of the State were laid before it. First, that of township Boards of Health reporting directly to the State Board, the plan pursued in New England, New York, New Jersey and the Western States. Secondly, that of County Boards of Health, composed of Health officers in each township. Third, that of county officers of Health, with deputies in each township. And Fourth, that of constituting the Coroner of each county a health officer, and the constabulary of the townships deputies. After thorough discussion, in which it became apparent that the third plan, that of the county health officer, with deputies, met with the most favor, the Committee on Legislation was instructed to prepare a bill embodying that system, and to present it to the Legislature at the earliest possible moment.

Pursuant to adjournment the Board reconvened at 3.30 P. M.

The Secretary then offered the following resolution, which was adopted :

Resolved, That the State Board of Health regards the investigations carried on at the hospital of the Veterinary Department of the University of Pennsylvania as of the greatest importance, in view of their ultimate beneficial effect upon the public health, by increasing our now very limited knowledge—first, of the contagious diseases of domestic animals, and their relation to the same class of diseases in human beings ; and, secondly, of the effects of certain diseases of domestic animals on their own flesh and secretions, considered as a food supply.

The President presented a communication, which was read by the Secretary, from Dr. M. S. Seip, of Easton, requesting the Board to endeavor to procure legislation forbidding undertakers to embalm a body before receiving a certificate of the cause of death from a physician. It was referred to the Committee on Sanitary Legislation.

Dr. McClelland, chairman of the Committee on the Sanitary Convention to be held in Pittsburgh in May next, reported progress.

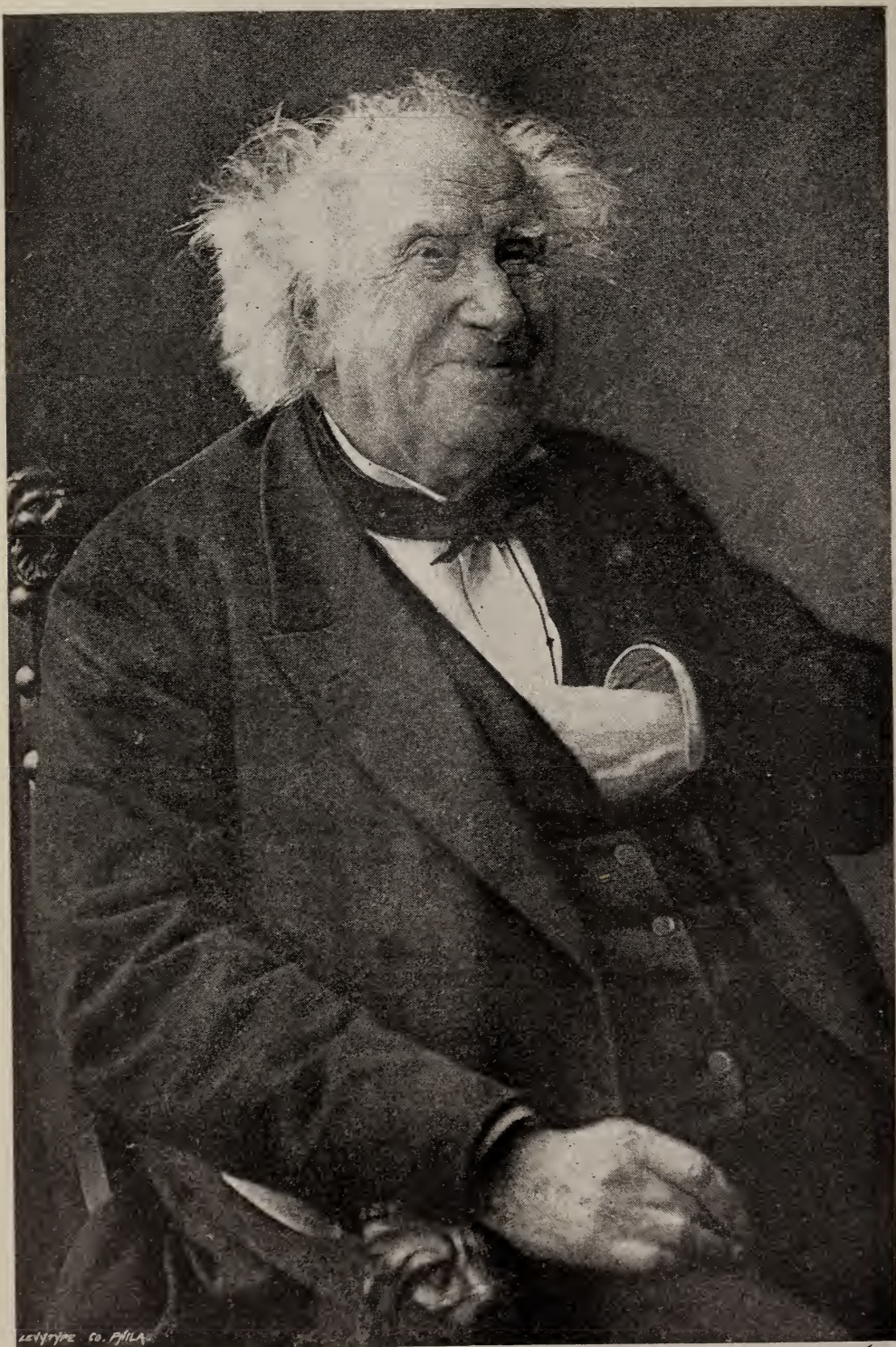
On motion the time of the next regular meeting of the Board was fixed for Wednesday, May 29th, at 10 A. M., in the City of Pittsburgh, and the time for holding the Sanitary Convention for Thursday and Friday, May 30th and 31st.

The chairman of the Committee on Sanitary Convention was on motion authorized to take the preliminary steps, and to incur an expense not exceeding \$300.

On motion the Board then adjourned to meet as aforesaid.

BENJAMIN LEE,
Secretary.

OTTAWA has a citizen by the name of Kidnocker. He should be appointed principal of the public schools.—*Ottawa Local News.*



M. CHEVREUL AT 100 YEARS.

THE ANNALS OF HYGIENE.

VOL. IV.

PHILADELPHIA, MAY 1, 1889.

No. 5.

COMMUNICATIONS.

GIPSY HYGIENE.*

BY EDGAR L. WAKEMAN.

I was "rising five," as the farmers say, when the first glimpse of Gipsyism touched and fired my childish fancy in the farm home where I was born. The glory of Indian summer still lay like a delicious dream upon the land when a certain November night came, and with it all the bitterness of winter. Belated stragglers in roads and lanes clung to the old rail-fences for support against the biting blast; while all farm folk went to the succor of the dumb brutes, which, huddling together as if bereft of all self-helpfulness, moaned and bleated piteously. It was a wild and cruel storm, much after the fashion of other storms dashing against prosperity, unexpected and overwhelming to the little farm world about. It brought on a bitter night early; a wild night without, but within the great farm-house it brought sweet cheer and content, and a dear old New England supper, with its melodious kettle-singing, wealth of shining pewter, its spotless tablecloth, and its dozens of flickering candles.

A houseful of rich and poor relations were there; had partaken of the bountiful supper with keener relish for the storm; and, bidding it defiance, had taken possession of the "other

rooms" which were now ringing with laughter and jollity. But in the kitchen the "hired men" were making boisterous preparations for their repast, my good mother the while having a careful and frugal eye to everything save myself, who, "rising five," and granted unwonted license by the occasion, was still perched at the table revelling in the general commotion. Just then the storm clutched the old farm-house furiously. There was a knock at the door, which, young as I was, I knew came from other than ghostly knuckles; and I shouted,

"Come in!"

The latch was sprung quickly. Then it was raised slowly. Another great frenzy and wailing of the elements and a scared, trembling thing was shot out of the night into the glowing of the cheery old room. Then, her hands behind her and still upon the latch, the snow beaten into her glossy black hair, which was matted wildly about her handsome head, she stood there the embodiment of desperate hope and fear; ready to bound back into the darkness and the storm's fury at the first intimation of unfriendliness. My mother was now in the door leading from the kitchen. She saw nothing poetical in the weird apparition; but with a genuine court-martial air, just chopped out the one word:

"Hungry?"

There was no nonsense about this New England bred matron when such

* Copyrighted, 1889.

a thing as a vagabond Gipsy girl was under consideration.

"Oh, missis! I don't mind a-bein' hungry; but I've gone an' got lost!" said the heathen, with a scared look in her great eyes, restless as a fawn's, and as if she had more than half a mind to take her chances outside again.

"Oho!" ejaculated my mother, with a world of conviction in that one word. "I see, you're one o' them rascally Gipsies that's been prowling around here for the last two weeks?"

"Yes, missis, I be," rejoined the waif, seeming to realize that in the balance as between her own and the Christian race, she deserved to be drawn and quartered at once. Then the little vagabond burst into tears, which I remember made her look very engaging and pretty.

My mother, a trifle softened, made haste to shut the doors, after which she took the girl to the fire and then to the table, where she gave her a smoking hot supper accompanied by numberless adjurations, all of which had for their moral that Gipsies could never escape eternal wrath until they abandoned the tent, the road and their generally vicious habits, lived in houses "like white folks," wore good clothes, and went to church three times of a Sunday. But I have always had a particularly tender spot in my heart for that mother because she locked, as well as shut, those doors and kept both the "company" and the "hired men" from staring the wild thing out of face while eating. Because, too, she did all her missionary work with a brusque yet certain touch of appreciation of the girl's immediate needs that had real humanity in it.

"Dirty?" asked my mother when

the raven had finished her meal.

"Hus Gipsies is *never* dirty!" said the girl quietly, but with a noticeable fire in her eyes.

"Pooh, pooh!" retorted my mother with a start, but as if fully satisfied that the vagabond must have a bath before lying upon a Christian bed, but sorely at loss as to where and how it should be administered.

She understood it all instantly, as Gipsies always understand, whether or not they seem to, and in a flash had her splendid brown bosom bared, and then whisking her sleeves up to her round shoulders, said excitedly:

"See, see! *A clean Gipsy!*"

In another instant she was bending down to present the same unanswerable argument as to her shapely legs; when my mother, examining the doors against the encroachment of profanely inquisitive eyes, hastily assured her she was entirely satisfied of her cleanliness; and then, taking both of us prisoners—this plump, glowing-eyed Gipsy girl and myself—she marched us up-stairs, away into the garret, and put us, still together, into the snuggest of trundle-beds, by a great roaring chimney, where, cuddling me in her warm arms, and muttering words of an unknown tongue, which surely held the modulation and accent of prayer, this lost heathen sobbed herself asleep.

The indignant protest uttered by this lost Gipsy who, as her people were breaking camp for winter quarters had been sent on an errand to a neighboring village and had lost her way in the blinding storm, is the real keynote to all Gipsy hygiene. Though contrary to general belief, it is true. During a close study of the race in many lands for more than a quarter of

a century, I have never known a physically unclean Gipsy, save with rare exceptions in the half-Turkish towns of southern Hungary, in the Calle Baluarte quarter of Havana, where, for brief periods, the Spanish Gitani of the island huddle for gain in *duk-kering* (fortune-telling) among the hideous mestizos and leprous Chinese coolies, or, in still rarer instances, in the almost unfathomable and unnamable purlieus of London and New York. But these would not comprise a one-thousandth per cent of the race; which cannot by any means be said of our own people. Genuine Gipsies of the road contemplate their skulking brethren of the street with inexpressible abhorrence, flinging upon them that most hateful of all terms of Gipsy contempt and reproach, *riah rajahs*, or "house lords." The *drom rajahs*, or "lords of the road," are alone the true Gipsies, with centuries of patriarchal life and wanderings behind them, traceable by a clear and shining line to an age as remote as when the eighteen Puranes were wrought by the mystic Vyasa. These, then, must alone be taken as examples in all things characteristic of the Romany.

A general formulation of the distinguishing features of Gipsy hygiene would be as follows :

First, Personal cleanliness.

Second, Open-air life and exercise.

Third, Discriminative selection in marriage.

Fourth, Extraordinary physical virtue and temperance.

Fifth, Unremitting physical care and training of the young.

Sixth, A *materia medica* direct from nature's exhaustless pharmacy; and a pathological professorship as comprehensive as the race itself.

To this first and elemental necessity to health, personal cleanliness, Gipsies are almost morbidly attentive. You may see the dirt-covered Gipsy dicker-ing in the dust clouds of the fair, sweltering and floundering under layers of filth beside his creaking wagons along the dusty highway, or soddently dozing beneath flakes of ashes and deposits of soot alongside his smouldering camp-fire; and you involuntarily exclaim: "A filthy lot, these!" But in all the world you will never find a Gipsy encampment a score of rods from a living spring or a running stream of water; and the sousings, soakings and rubbings of the Gipsy body are marvelous and interminable indeed. This is as true of the Gipsy woman as man. Nor does any prudish sense of modesty prevent a score of both sexes occupying nature's bath-tubs together. And this cleanliness does not end with the body. The clothing, or at least that portion worn next the person, is constantly being changed for airing or for washing. Indeed the Gipsy washing-day is eternal. Your civilized aristocrat will sleep upon a stuffy mattress a score of years without change. If the Gipsy's bed is of straw, it must have the air and the sun daily. If it be of leaves and twigs, the aroma of fresh ones is never absent from the quaint woolen hood which covers them. Disease in man or beast to these wanderers practically means uncleanness.

If Gipsies may be said to possess any ethical or religious principles whatever, they will all be found underlying and sustaining their own as against all other modes of life. Innumerable times have I made the direct inquiry of my Gipsy companions and friends regarding this matter,

and on every occasion have I been met with the answer: "Because we are God's chosen people!" Pursuing the same line of argument, they will gravely proceed to draw a host of similitudes upon the statement that Gipsies are the true descendants of the house of Rechabites, so loved of the Lord for its people's faithful observance of divine commands; while with radiant unction they will quote: "Neither shall ye build house or sow seed, nor plant vineyard, nor have any; but all your days ye shall dwell in tents that ye may live many days in the land where ye be strangers." Be this as it may, the extraordinary health, longevity and painless fading out in death, from extreme old age, of the Gipsies, seem directly traceable to their out-door life and gentle exercise followed at all times by ample repose. In every Gipsy camp, as the tawny crew creep from their tents or wagon-covers for the day, you will see men, women and children standing half-dressed, stretching themselves and literally "eating the air," as they call it. And the way they do it, which I copied, increasing my own weight from about 170, to upwards of 200 pounds, is worthy of general practice. Curving the shoulders forward and slightly lowering the head, they gently inhale the air through the nose, the meanwhile gradually becoming erect, until the lungs are filled to their utmost capacity. Then simultaneously contracting the muscles of the thorax and sharply bringing the clenched crossed-arms to the sides, the pure air of heaven is thus pounded into the minutest bronchi of the lungs, until much of the partially impure residual air is disturbed and expelled by subsequent gentle expiratory process from

between the lips. I have no scholastic knowledge of hygiene whatever; but I believe that this simple Gipsy practice followed in the open air every day of one's life, would arrest and cure consumption in its early stages, and would add a score of years to the life of the average American capable of the exercise of ordinary common sense in other details of habit and hygiene. The Gipsies' exercise is of course all out-door exercise; but it is never over-exertion. The American farmer lives a life of permanent suicide from intermittent over-doing, over-anxiety and loss of needed rest. He may hibernate for six months of the year; but during the other six he toils and broils so that, at forty, he is a subject for pills and bills until the village graveyard has received his tortured and twisted remains. The Gipsy in every part of the world is a man of exertion, on the road, among the live-stock with which he is surrounded, and in countless duties of every-day camp-life; but he will invariably treat himself as well as he will treat his own beasts. He has observed that after effort these enjoy rest in the day as well as at night. He simply implicitly obeys this natural law of compensation. He will therefore sleep, doze, or fling himself into a picturesque attitude of repose, whenever the inclination possesses him; and re-exertion is more often at the command of an exuberant vitality than at the scourging of the will.

A most important reason for general good health and longevity among the Gipsies is found in the care they exercise as to the mating of healthful men and women. There is not in the whole world other such matchless breeders and trainers of orses. To

their own procreation, they merely apply what their nature-loving and nature-obeying intelligence has found to be wise and well. No Gipsy youth or maiden possessing any hereditary taint, or chronic ailment, is permitted to wed. Such a one is as tenderly loved and cared for as any other, to the end. But, while Gipsies are never even unconsciously Malthusian extremists, for no race is more fecund and regardful of the young, they possess an inherent hatred and dread of physical imperfection.

Another and equally important factor in Gipsy hygiene is found in the extraordinary physical temperance and virtue of the Gipsy. A certain kind of literature is full of romantic incidents based upon the irregularities of Gipsy female character. One and all they are conscienceless libels on the purest race that exists. While Gipsies are without law, as we know it, no people live who more rigorously follow, in fact and to the ultimate of spirit, the highest and purest code of physical and moral observance. They universally revere the marriage relation. I say universally, and use that word unqualifiedly. There is not an exception. The religious faculty as we develop it, and distort it, being wholly lacking in these nomads, another seems to have taken its place. That is virtue-worship. All this begins back of the suckling babe at its mother's breast. It is bred and inbred in pre-natal assimilated loyalty. The home government and surveillance are such that children grow unconsciously, hereditarily, into virtuous lives and loves. Believe it or not, Gipsy men and youths regard virtue of as noble a perfection in men as in sweetheart or wife; and some idea of

the awful sacredness of that requirement in woman may be had, when the fact is stated that any Gipsy maiden found, on marriage, to have been unchaste, is visited with the most horrible fate that can by any possibility come to her in this life—utter and endless expatriation—and more than once the lives of such have been sacrificed with the calm and unvarying approval of parents and friends; while such a thing as disloyalty of wife to husband, or husband to wife, after marriage, has yet to be recorded of Gipsy on the European or American Continents.

Again, the physical care and training of children form a remarkable element in Gipsy hygiene. Because the Gipsy father and mother are themselves types of good health, healthy children are born to them. Because every Gipsy woman on earth is loyal to her mate, many children are born to them. Because the instinct of fatherhood, motherhood and partnership is inviolable with husband and wife, Gipsies love this to be so; and the care of, and affection for, children are extraordinary indeed. From the moment the babe is born until it is upon its own legs for good, it is constantly rubbed and stretched and kneaded, that every muscle may have proper action and development. The same wise practice I have found by long observation to exist among the Pennsylvania Dutch. It began with the latter behind the Swiss mountains, centuries ago; and it would be an interesting research for the student of men to ascertain if this precisely identical Gipsy and Pennsylvania Dutch custom had not, at some remote time, the same oriental origin behind the Himalayas.

Be the child boy or girl, its first view of life is taken from a horse's

back. The children are born veterinarians and the *materia medica* of nature, in roots and herbs, becomes instinctively and unconsciously so much a part of their training and acquisition that, for every ordinary ailment of man or beast, every Gipsy human has an immediate and certain remedy at hand. It is undeniable that civilization entails complexity of disease. In the main, good health may be said to logically follow the simple out-door life of these unperplexed, unworried nomads. To so slight a degree is illness known among them, that even peevishness and irritability are esteemed a disease, for which must be sought a physical cause and cure; and, curiously enough, the Gipsy will straightway administer diuretics to either man or beast, to reach the brain and nerve centers through the kidneys. Persistently refusing the distractions of books, their minds are not worn and torn by the ethical problems and contradictions of civilization. They see nothing in the design of nature which influences them to anxious, force-destroying dread concerning the mysteries evidently purposely withheld from all mankind. Instead of elevating mentality to the debasement of the physical man, as is largely the case in modern civilization, despite the tremendous effort and intellect engaged in preventive and curative processes, Gipsies certainly attain the serenity of mentality through the exaltation of the physical being.

All this may not be according to any of our notions; or like anything we think we know; but, reflexively, it primarily arises out of simple living, and returns with physical blessings to my tawny friends, giving them in every-day results the most perfect

health, and, consequently the greatest tranquility of temper and equability of temperament, of any race of men.

ADULTERATION OF MILK.

BY EPHRAIM CUTTER, M.D., LL.D.,
OF NEW YORK.

When one considers that the infants and children of our cities consume the large part of our milk supply, and that they are harmless innocents, then the great wrong inflicted by the miscreants who deliberately and purposely adulterate milk for the sake of making money should be put in the most flagrant light. If anyone will take the pains to read the reports of the Boards of Health on these subjects, evidence enough will be found to sustain this position. However, public opinion has become awakened (and public opinion is stronger than law) and the present state of things is much better than it was.

Some years ago, in Boston, a notable clergyman, lately deceased, took up the matter and formed a company to furnish pure milk to customers. Space is wanting to tell how much opposition this effort encountered, specially from the middle men. In the first place they bought up all the milk cans in Boston. More cans were obtained from outside. Then they interfered in every way possible to prevent the company getting the plant for business; not succeeding, they hired out as deliverers of the milk—they would defile it with manure—hire servants to leave milk in the cans and set them on a hot stove till the milk was burned into the bottom of the can, and so on. Finally they broke the business up, and the old way of cream

sold separate from the milk, milk without cream, watered milk, sophisticated milk, regardless of the misery, sickness and death to childhood brought on, was reestablished, and I suppose is still going on with its devilish work. But not so badly as formerly, on account of the Boards of Health interfering. Still there is enough of this evil to make people wary about paying money for value not received and damage done to their children.

It is a curious ethical fact that farmers do not market their own goods, as there are enough to do it. I know one farmer who does it, and has made money. Others might do it as well. But how much better to avoid much of this sophistication business and its ruinous results by feeding mothers on the two-thirds animal and one-third vegetable diet recommended in my last article, and the babes would get the pure unadulterated article, warm from the breast. If motherhood would do this, soon there would be a generation of farmers on the stage smart enough to manage the distribution of their own farm products—milk among the rest—and do away with the terrible incubus of the middle men, who fat themselves off the profits, sometimes iniquitous, while the farmers suffer the loss of the honest gains of their own toil.

The introduction of co-operative labor, creameries, centrifugal machines, coolers and railways have wrought some good changes, but the shortest cut away from the milk troubles is for motherhood to nurse its own offspring and thus be sure of the genuine article served with no intermediation. The producer being in close connection with the consumer, and the whole process going on under the eyes of the producer.

NOTE.—Some of the worst adulterations in Massachusetts were found to be done by farmers in Worcester County. Moreover, I have been informed that farmers who peddle their product have been known to water it. All of which further goes to show that this work, "Food in Motherhood," is needed.

A CHAPTER ON BEAUTY.*

BY EVELYN MALCOLM.

The Hottentot belle hangs a bangle in her lip and paints her nose sky-blue; the Malay beauty files her teeth close to the gums and stains them black; the Sultan's favorite paints her eyelids and colors her finger nails with henna.

The enlightened woman does none of these things, of course. She understands the law of beauty better than the benighted Hottentot, better than the indolent beauty of the harem. Nevertheless, according to her light, she follows the same instinct, and "for ways that are dark and tricks that are vain" to enhance her beauty or hide her blemishes civilized woman is not one whit different from her less fortunate sisters.

This sweeping statement admits, without doubt, of many exceptions. It would be a very sad state of affairs if there were no girls whose cheeks boasted of the freshness acquired only from innocent applications of cold water. Nevertheless, in all the large cities of this country and Europe cosmetics form an important part of the average woman's toilet.

Arsenic is sold under different names and its effects may be noticed every day on the faces of very young girls,

* From the Philadelphia Press.

who, it appears, are the only ones silly enough to buy it. These arsenical preparations leave the skin the whiteness of wax, not a natural flesh tint. If continued, they shatter the constitution and eventually destroy every vestige of former beauty. If commenced and used only for a short time health may be saved, but the skin, still preserving its waxen appearance, slowly turns yellow, deepening in color till it reaches a genuine jaundice hue. The moral is, shun arsenic in any form as you would a plague.

Not more than three years ago there was a small store in New York, kept by an old and very interesting Frenchwoman. She sold everything that could possibly be required on the most artificial woman's toilet table.

One Winter night, during the ball season, I stopped in to buy some manicure articles, and found her just commencing operations on a "subject," as she called customers of this kind.

The subject's eyes were closed as she lay back in a chair in a curtained niche. At a sign from the French woman I took a chair at a little distance, where I could not be seen, and watched her process. It was certainly as astounding as interesting.

She first dipped a silk sponge in warm water and bathed the face and neck, and then dried very gently with a soft cloth. This done, she covered every inch of skin from forehead to bosom with a grease that resembled white glue; over that she rubbed in a delicate, flesh-colored powder; then pencilled brows and lashes with a tiny camel's-hair brush, shaping the former with her practised thumb and forefinger; touched the edges of the lids with a faint blue powder, drew a delicate network of veins on temples and

shoulders, colored the cheeks a faint but enduring pink, the lips a deep red.

That was all.

The subject stood up at length, a veritable work of art, and looked in the mirror with complacent admiration. The work was certainly done with astonishing nicety, but in the simulated, unchangeable blush there was nothing of nature, and the smile, as she hurried out to the cab waiting for her, was as false as the shadows under her eyes.

The Frenchwoman gave her shoulders an eloquent shrug as she dropped the easily-earned ten-dollar bill into her cash-box.

One so often hears the expression, "Surely no one can object to a little powder."

There are not many who do. A little powder is innocent and harmless. But a girl often commences with "a little powder to take the shine off," but ends by carrying a powder puff in her pocket, with which she dusts herself at every opportunity, apparently blissfully unconscious that her nose seems made of chalk.

As for rouge, one does not meet many women in a day's walk who have not at least a *soupc*on of color on the cheeks. The masculine eye cannot detect it always, but a woman is never imposed upon. A natural color shows through the skin, and there is no rouge can give the true effect of nature.

Then should not a woman take further interest in her appearance than to be clean, to have her hair well-brushed, her nails trimmed? She certainly should. A woman should do everything reasonable to improve her face or form, but cosmetics, besides being vulgar, are injurious and, instead of

improving, tend to destroy good looks.

Cleanliness is the first essential to preserving beauty of skin and outline. The entire body should be bathed every morning. If a person is too delicate for this a sponge bath will answer almost as well, and can never injure if the body is well dried after it. Diet comes next. Avoid greasy food, rich gravies, pastry, etc. Don't eat much butter. Never drink beer.

Fresh air and exercise are the only cosmetics which will have a lasting effect. American girls do not walk half enough. If they have a short distance to go, say a mile, even half a mile very often, they take a car. English and Irish girls think nothing of walking ten miles.

According to some this climate is too trying to permit of such violent exercise, but at least three miles a day in fine weather cannot be too much if one feels well.

A very simple and excellent way to make the skin clear and smooth is as follows: At night use the prepared mixture of vaseline and cold cream on the face and lips; rub it in well with the fingers, then wipe thoroughly, as sufficient is left in the pores without leaving the face greasy. In the morning wash with plain brown soap, rinse carefully in warm water and then in cold; this softens the skin but keeps the muscles firm, and if a little bay rum of the best quality is used after the skin becomes as smooth as a piece of velvet.

Powder can be used if desired. The least injurious is the simplest—plain drop chalk. To improve the hair brush it for twenty minutes every night and braid loosely on retiring.

Washing the hands in water diluted with vinegar will make them white.

Nothing, however, will be of much benefit to the skin unless the first principles of health are observed and the stomach is kept in good order. A woman with a cold in her head can never be interesting either—therefore beware of getting your feet wet, and don't go out in cold weather with underclothing fit for a Spring day and a little jacket weighing about three pounds.

Don't expect to have bright eyes if you use them much at night or walk in the teeth of an East wind without a warm veil over your face.

To be graceful, don't wear grotesque bustles and tightly drawn skirts.

The most ungraceful animate things in the world are men and women. And yet God meant them to be graceful. Everything in nature is so. If you have ever watched a kitten's movements, the circles a buzzard makes in flying, the repressed strength in the dignified step of a mastiff, the dainty arch movements of a thoroughbred's neck, you must know this. ' But men and women have degenerated in their motion; they are careless. They patter or slouch, or limp or shuffle, as a general thing, from sheer thoughtlessness. According to some writers on the subject, women should be feline in movement, taking the cat and the panther for models in the act of walking.

To avoid a jerky step practice a continuous movement from the waist, not from the knee, lifting the foot parallel to the ground, not bringing it down heel or toe first. This may not give one the "pantheresque," "padding" step so often ascribed to heroines in novels, but it will enable the walker to get over the ground with an easy, light motion.

A lively expression is a great attraction, and the homeliest face is never uninteresting with it. Let the eyes portray what the lips utter, and don't let a smile play about the mouth while the eyes remain unsympathetic and expressionless. Montaigne says: "In a face which is none of the best there may be some air of probity and trust, as, on the contrary, I have seen between two beautiful eyes menaces of a dangerous and malignant nature."

POISON MILK.*

BY PROF. JAMES E. VOSE,
ASHBURNHAM.

The Romans exposed their superfluous children in the Lupercal, and thus made summary work with them. We take ours through longer and more refined tortures, but succeed in destroying many of them before the age of five. It may be questioned which indicates the greater barbarism.

One of the most potent instruments in this destruction has for some reason received little attention—the feeding of green, succulent food to cows. Every dairyman is familiar with the laxative effects of green corn, etc., upon his cows. Now, no principle is better established than that the animal excretions go very largely into the milk; how quick, for instance, a feed of turnips will produce its effect. Hence it might be expected that if the cow be purged the babe fed upon her milk will be; and that this is actually the case, and in a dangerous degree, any one can satisfy himself by a very few

experiments. It will be found, I think, that a single feed of green corn, the "trimmings" of a dinner of green vegetables, or anything of a like nature, will at once produce harmful effects on the child.

I tried this carefully a few years ago, feeding very cautiously and keeping the thing from the knowledge of the mother, but every time the green food was fed, be it a single foddering of green corn, a few pea-pods, or the trimmings from a few summer squashes, the ever-watchful mother would attack me with, "What has the cow been eating lately?" One night the cow got into the corn and ate quite heartily, and the children were made sick for a week, the youngest seriously so. It is well known that the change of the cows from dry pasture to the succulent clover of "Fall feed" will produce for a few days the same effects, but the cows soon get used to it and resume their wonted condition. Thinking the same result would occur with the children, I kept up the cautious experiment for some time, till it became plain that if I did not give up the children would, when a change was made with entirely satisfactory results.

The season is at hand. Corn fodder and similar foods are to be given to all the cows in the greatest profusion, to keep up the utmost possible flow of milk, regardless of quality or effects. And the consequent diarrhœas and dysenteries will begin to carry off the bottle-fed infants by thousands. There is no reason why a babe should not be reared perfectly well on artificial foods, only great care must be taken, especially with the cow. A whole-souled milkman of my acquaintance, whenever he "has a baby on his hands," as he terms it, takes a good cow from

* From *The Congregationalist*.

the green fodder and feeds her upon dry food alone, and then keeps that milk carefully for the babe. So much he learned to do by his experience, and he deserves a medal. But how many such milkmen are there?

A little inquiry will show any one that this is a matter of serious import, deserving investigation, if not a crusade. Those having a family cow of their own (as every family should when possible) can usually avoid trouble by wilting the green food well for two or three days; but, of course, the milkmen will not do this, as it costs labor and seriously diminishes the flow of milk. In the larger places there would seem to be no alternative but to encourage certain milkmen to make a specialty of furnishing milk for babies, and then guard the purity of such milk by stringent laws and rigid inspection.

In this connection the silo must not be forgotten. Every one knows the effect upon the child of alcohol drunk by the mother. Now, with all its desirable qualities, the silo has this also, that it is an alcohol or acetic acid producer of the most villainous sort. The effects, then, of silo-fed milk upon young children cannot fail to be dangerous to the last degree, and no mother should use it who does not wish to run serious risks. It will not be long before the physicians will begin to sound the alarm on this point, as, indeed, some of the more vigilant have already done. In these days of societies for the prevention of cruelty to animals and cruelty to children, of praying crusades and C. T. U's, why is there not some one to stir a woman's crusade in behalf of our half-million of little ones every year in those wicked ways needlessly slaughtered?

HEALTHY HOUSE BUILDING.

BY C. FRANCIS OSBORNE,
Consulting Architect, Cornell University, Ithaca, N.Y.
[Continued from page 157.]

The construction of the floor between the cellars and living rooms is an important detail usually slighted. It is a matter of common observation that however well lighted, ventilated and drained a cellar may be, the fact that it is partly or wholly below ground renders it colder and damper than is suitable for living rooms. Now if we construct our floor so indifferently that this chill and damp may penetrate to the upper rooms, we render them materially less wholesome than they ought to be. From another point of view the usual form of floor is defective. Accidental fires are very likely to start in the cellar from the heating apparatus, or from the spontaneous ignition of the dry refuse which so often accumulates, and with the ordinary construction of floor the flames of such fires are readily communicated to the upper floor. Our knowledge of the principles of construction best adapted to resist the spread of fire has been materially increased by the experience of the mill insurance companies of New England, and it has been demonstrated by the successful carrying out of these principles in many buildings, that the use of timber in large pieces, and the avoidance of concealed and inaccessible spaces in the floor and walls render the fire-risk very slight indeed. Applying these principles to the construction of the ground floor of an ordinary dwelling house, we might proceed as follows: The floor joists for spans up to eighteen feet might be five inches

wide and twelve inches deep, spaced about four feet apart. On this two inch matched plank should be laid, face down so as to present a smooth surface on the under side. On this, strips of wood one inch thick and two inches wide, laid flat, should be nailed twelve inches apart. The spaces between these strips should be filled with mortar to the tops of the strips. Then finally, over the mortar, and nailed to the strips, the finished floor three-quarters of an inch thick should be laid. A floor of this character will be so slowly attacked by fire, and is so easily extinguished when in flames that it well merits its title of "slow-burning." It will prove an effective barrier against the rising of the chill and damp of the cellars, and practically isolates the basement from the rest of the house so far as the floors are concerned.

The hygienic value of any house depends in no slight degree upon the arrangement of its plan. Apart from such considerations as the proper sequence of rooms or the convenient shape and fitting of any of them as conducing to the smoother working of the domestic machine, and so lessening the nervous wear and tear of those living in the house, the disposition of the living rooms so that they may obtain the maximum amount of sunshine for desirable aspects, and the insurance of adequate ventilation bear directly upon the health of its occupants. This however is a subject of too large a scope to be included in this writing, and I have treated of this matter fully in other pages. More important is the subject of plumbing, but this too can not be treated in detail. Nor is it necessary, for it has been fully written upon by many com-

petent experts, whose writings are available to every reader. And it may be well however to sum up the latest conclusion on this subject. In the first place the plumbing should be as little in quantity as possible; for while a small quantity of plumbing may be rendered safe, the more the quantity of it is increased in a much greater ratio increase the difficulty and expense of making it thoroughly satisfactory. In a house of moderate size, one ought to be content with as much plumbing as can be compactly grouped about one vertical soil pipe, with no waste pipes over six feet in length, and much less if possible. It should be made an invariable rule that every room in which there is any plumbing apparatus should be lighted by an ample window, next the outside air, and so arranged that the light shall fall directly upon the apparatus. Scrupulous cleanliness is the price of vigorous health, and this cannot be secured without ample light in all parts of the house. For the same reason it is undesirable that the apparatus should be enclosed in wood-work, but on the contrary, it ought to stand free and clear on all sides, so that leakage or slopping over may be at once detected. It should be the business of some trustworthy person to superficially examine all the apparatus in the house once a week, in order that any serious defects may be detected, and not less than twice a year it should be looked over by a competent plumber and all wear and tear made good.

FOR WARTS.—Kaposi suggests the use of one part of bichloride of mercury dissolved in thirty parts of colloidion, a little of the solution being painted on and around the base of the wart once daily.

WASTED SUNBEAMS—UNUSED HOUSE-TOPS.*

BY GOUVERNEUR M. SMITH, M.D.,
NEW YORK.

Human habitations, though erected for the benign purposes of insuring comfort, affording protection, and promoting family privacy, are, unfortunately, often the causes of a number of the morbid ills from which mankind suffer. This fact is true, as relating to the residences both of the rich and of the poor. It is a difficult task to construct an absolutely sanitary dwelling. In nearly every home, however, there are more or less avoidable, insalutary conditions, which are undermining the health of each family circle.

Tent-life, in genial climes, affords to many a healthful mode of living; and tent-life, in the warm season of the temperate zone, has its fascinations and its beneficial results. To be tabernacled under canvas and engaged in open-air occupations is often healthful; but the camp must be well sited, or the proximity of unkind neighbors, as cesspools, pens, and polluted water, will as surely rob the camp-dweller of his vitality as the footpad will rob the unguarded of his treasures. Camp-life, salutary as it may often be, is not adapted, from climatic and other causes, to meet the necessities of universal home requirements.

History tells us that certain nomadic tribes, in the early ages, finding aggregation and permanency of residence desirable for business and other purposes, built solid structures, and, striking their tents, have thenceforth dwelt in substantial residences. From

these primitive architectural styles of dwellings, we can learn certain lessons which, if adapted to suit our own civilization and our own climate, would promote the health and longevity of our race.

The nineteenth century will ever be memorable for the advancement it has given to medicine, surgery, and sanitary science; but the twentieth century, when reviewing and profiting by the achievements of its predecessors, will doubtless be amazed that the domiciles of mankind, especially in cities, were in some respects inferior to those built several thousands of years previously.

The writings of Virgil, Horace, and other classical writers can be read with interest and benefit, at the present day as teaching the style and erudition of an ancient period. In Xenophon's "Memorabilia," after describing how homes should be pleasant and useful, cool in summer and warm in winter, it is added: "If it is well, therefore, that houses should be thus made, ought we not to build the parts toward the south, higher, that the sun in winter may not be shut out, and the parts toward the north, lower, that the cold winds may not fall violently on them?"

Sacred writers offer important lessons, also, concerning Eastern habits of thought and customs regarding habitations, which can be utilized in a most profitable manner in the present age. The early Oriental had no conception of the nature of air or sunlight, as now understood by modern science. Probably much of our present knowledge is but polished ignorance. Chemistry and physics have only recently become efficient handmaids in the precise examination of nature, but without these aids the Eastern mind

*From the Med. Record.

drew certain broad and grand deductions from the investigation of natural phenomena. Some of these tenets are axioms in our own philosophy.

These ancient forefathers believed that fresh air was an important factor in maintaining physical vigor, and that exposure to the solar beams was salutary, and they lived according to their convictions. In constructing their homes their architects utilized their house-tops and gave them salubrious plateaus. The roofs, gently declining as water-sheds, were covered either with tiles, bricks, or cement, making them as durable as pavements. Beddings of turf, prettily distributed, made these artificial deserts to blossom as the rose.

The boundaries of each house were designated by walls, but it was possible to walk over an extended neighboring area. To prevent accidents, obedience was given to the scriptural injunction, "When thou buildest a new house, then thou shalt make a battlement for thy roof, that thou bring not blood upon thine house if any man fall from thence." It is not a matter of wonder that such house-tops proved favorite places of resort, for worship, conference, and repose, and that occasionally tents were spread upon them.

Is there anything either in our climate or state of civilization which prevents us from, in a measure, imitating such ancient, useful, and fashionable airiness? During the inclement season of the year, comparatively little use might be made of the house-tops. I will subsequently allude to how the upper stories of dwellings might be constructed to catch the genial sunbeam, while shutting out winter's rudeness. Our atmosphere

is proverbially bright, and many of the severer days are sunshiny; the genial element is subject to capture and benign use, as we can pluck quinine from its barky surroundings.

In a great metropolis like this, there are thousands of children and invalids, to say nothing of those in mature years and engaged in the ordinary pursuits of life, who require more fresh air and sunning, than is now practicable. City yards are small, shut in by tall buildings and high fences; the parks may not be adjacent, and the streets afford ill-conditioned pleasure-grounds.

Cannot architectural ingenuity, coached by sanitary science, contrive some method of using the thousands of acres of house-tops on this island so that roofs, now so useful in affording in-door protection from cold, sleet, and rain, can be made additionally useful, at certain seasons, by affording out-door recreation and protection from invalidism? Cannot the same skill contrive new designs for the upper and most salutary stories of our dwellings; playing rooms and sunning rooms, especially adapted for the winter season, but so cleverly fashioned that too intense torrid beams can be excluded in summer?

Physicians not infrequently have occasion to observe the arrangements and conditions of the upper floors in our first-class private dwellings; for if a servant is sick, the family physician may be summoned to attend. The conditions may not be absolutely pernicious, but the space on these precious stories might be utilized in a much more healthful and attractive way. The heated and vitiated air from the lower part of the house rises to the top floor, with perhaps slight

provision for its exit, and here are found servants' and storage rooms and also often a dark closet with precipitous ladder, leading to the scuttle, rarely entered and ascended, except by workmen to repair the roof. Apartments for domestics, have to be provided for, but quarters for trunks and unused articles, rather than occupying choice space, could be centralized in the building, be lighted from above, or relegated to some special annex in the yard.

In the ordinary and more spacious private dwellings the upper floors could be revolutionized: ventilating shafts introduced, new broad windows running the width of the house both front and rear, re-arrangement of space, ready accessibility to the roof afforded, and at least a part of these floors made attractive to children and invalids as a bright, airy, and healthful resort. The limits of this article forbid giving details of such construction, and other collateral suggestions, making such changes practicable.

It is beyond the scope of this paper to point out all the evils attendant upon modern homes; one evil to which I am specially alluding is that of etiolation. Etiolation, while favorably regarded by farmers in rendering celery white, crisp, and tender, is not favorable in regard to bringing up human beings.

Not many years ago, for a time, it was widely customary here, to hang blue-tinted glass panes or sashes in windows, curtains were drawn back, and many a room, from which the winter's sun was ordinarily, for the most part, excluded, was now brightened. Invalids and others basked in the shiny genial, and apparently with benign effect. Was such effect attri-

butable to the mere azure tint alone, or to a salutary and unaccustomed hyemal basking?

In many of the lofty and palatial apartment houses in New York, comparatively fire-proof, wealth selects suites of rooms near the apices, the air being dryer, purer, brighter, and healthier than near the ground. It seems very clear that even private dwellings, occupied by single families, are not planned in the wisest manner.

Equally new attention should be paid to a utilization of the roof for a large part of the year. The city boy of to-day wishes to fly his kite. As a special privilege, parental consent is given to his going upon the house-top; but, with what injunctions! Precautions against falling off, that he take feline steps, or the paint will be scratched and the joints of the thin tin covering will be cracked and the roof made leaky, etc. As illustrating present inaccessibility to the roof; during the recent large fire at Forty-second Street and Lexington Avenue, a party of ladies in one of the fine houses on Murray Hill endeavored to go on the roof, to witness the adjacent conflagration. One of the ladies became wedged in the narrow passage. She survives, to grace her family, and to tell a humorous experience.

Roofing can be contrived suited to this climate, and enduring as pavement. A pleasure-resort might ornament each residence, its limits bounded by the area of the dwelling; neighborly consent could widen the range, turf and flowers brightening the plain. Iron-framed and glass-enclosed rooms, or cupolas, could be added, which would prove useful during all seasons, artificial heat tempering brumal inclemency.

If such adaptation of house-tops would be an advantage to the affluent, who can escape city life during the summer, how much greater advantage would be secured to the tenement-house districts. It would be more difficult to preserve roofs in the latter quarters in good order, but the public weal seems to demand that ingenuity should devise an adamantine roof-covering. The promiscuous mingling on house-tops of the residents of slums, freed from police restraint, might at times lead to mischief; but ordinarily, and over a large area, it is reasonable to believe that the innate proprieties of life would prove an all-sufficient constabulary influence. For the higher grade of tenement houses, such fresh-air facilities would probably be hailed with delight by the inmates. The proximity of open breathing places to their rooms would endear their humble homes. Summer moonlight evenings could have a new aspect; and, again, round a family lantern, groups might gather to read, sew, or engage in games, and thus a home-felt pleasure could quiet restless spirits, craving questionable or illicit amusements. More true enjoyment might be observed in such groups than on the piazzas of fashionable resorts. Landlords could arrange for the periodical sweeping of roofs, as well as the halls and stairways, and among a very large class of the respectable poor, pride would stimulate to a tidy and decorative care of their home parks.

The confirmed vicious and degraded classes would neither appreciate nor properly use such improvements if offered them. In turning to higher grades of humanity, we find an aristo-

cracy permeating even the lower million. In the same tenement house social distinctions may be observed among families, obstructing intimate domestic intercourse and cordial friendly co-operation; but a well-recognized common weal would doubtless link such diversities into a sufficiently harmonious and democratic unity of action.

I have thus pointed out what advantages to health might be secured by a re-arrangement of the upper stories of private dwellings, making them the most salutary, in each residence. I have also shown how the house-tops of both the opulent and of the poor might be adapted for the private and public welfare of mankind, especially in cities.

Architects have merely to study ancient history and modern science to utilize the suggestions here made. Sun-beams and oxygen have been running to waste long enough. People must congregate into cities, and such crowding together must necessarily preclude, in a measure, some of the most salutary ways of living. The poet has said, "God made the country, and man made the town;" but the Divinity who so beautifully fashioned the country, brightens both His own handiwork and the town with the same sunlight, and aerates with the same atmosphere.

Cannot cities more generously use nature's benign gifts? Cannot the closing years of the nineteenth century witness a revolution in the construction of dwellings, a change in the habits of city life, and a most notable improvement in the health of the people?

THE PROPAGATION AND PREVENTION OF DIPHTHERIA.*

BY J. LEWIS SMITH, M.D.,
OF NEW YORK.

In treating of its mode of propagation no fact is better established than that diphtheria does not arise *de novo*. Like eruptive fevers, it is produced by the reception in or upon some part of the system of the pre-existing specific poison. The extreme contagiousness of diphtheria from person to person is well known, and the virus adheres tenaciously to objects on which it happens to alight. The clothing of a patient, even when the disease is of the mildest form, his bedding, the furniture of his room, and the objects which he handles, may for weeks afterward communicate the disease. Dr. Sternberg, in his recent Lomb Prize Essay, also mentioned the fact that all damp, foul places, such as sewers, cellars and ill-ventilated spaces under floors, afford conditions favorable for the development and propagation of the diphtheritic virus. The virus, once received, may be propagated in such a place for an indefinite time and, ascending in the vapors which arise from this culture-bed, it is liable to communicate the disease to anyone who inhales it. Thus, in New York City, prior to 1850, although foul sewers and unsanitary conditions existed, there was no diphtheria; but in the decade following 1850 this disease was introduced. The germ made its way into the sewers under ground, and now wherever sewer gas escapes into the domiciles of the city it carries with it the diphtheritic poison. The amazing vitality and power of propagation

of this virus are apparent when we reflect that it has permanently infected the New York sewers; so that children in all parts of the city are constantly falling ill with the disease. It is chiefly by exposure to the emanations from this widely extending culture-bed and to walking cases, often so mild that there is little or no complaint of the throat or impairment of the general health, that diphtheria is so prevalent here. The diphtheritic virus is so subtle, and its vitality and power of propagation so great, that when it is once established in a sewered city the disease can probably never be stamped out, as cholera and yellow fever can.

Diphtheria is commonly communicated by the inhalation of air containing its specific principle, from whatever source the latter may be derived. More rarely the contagion is contracted by means of direct contact with some infected substance, such as a particle of the diphtheritic exudate, mucopurulent secretion from an infected surface, or the blood of a patient. Observations are also accumulating which show that diphtheria, or a disease closely resembling it, occurs among animals, and is sometimes communicated from them to man. Having mentioned several recorded instances of this, he spoke of experiments by different observers which would seem to show that diphtheria can be transmitted from man to animals, and stated that if this were true, it might be inferred that it could likewise be transmitted from animals to man. Such observations and experiments render it probable that genuine diphtheria, equally fatal, and attended by the same symptoms and anatomical characters as in man, does occur in birds,

* Abstract of a paper read before the New York County Medical Association.

whether wild or domesticated, and in certain quadrupeds, as the rabbit. Nevertheless, it should be added that certain eminent pathologists, among them Virchow, have doubted the identity of animal and human diphtheria. With our present light upon the subject, I think it is evident that, since our relations to domestic animals are so close, if they are sick with any disease resembling diphtheria the same precautionary measures should be taken to prevent infection of the family as in human diphtheria. Milk is a culture medium of various microbes, and it is probable that it may be the medium of communication of diphtheria as well as of scarlet fever.

In concluding this portion of the subject the fact that diphtheritic virus may be conveyed long distances without losing its power is now admitted from the many observations that have been made, and the statistics given by Prof. C. W. Earle, of Chicago, in his paper on this subject, read before the Ninth International Medical Congress, render it probable that the infection is not infrequently transmitted over long distances to salubrious rural localities by means of articles of clothing and merchandise.

In the prevention of diphtheria, as regards the small extent of the area of its contagiousness and the persistence and highly infective character of its virus within that area, this disease resembles scarlet fever, and is unlike measles and whooping cough, the specific principles of which, although they have a wider contagious area, are more volatile and more quickly dissipated. The most efficient method of preventing the propagation of diphtheria is the isolation and disinfection of patients, the prompt and thorough

disinfection of the apartments occupied by them, with their furniture and bedding, and the exclusion or prevention of all noxious germs. There is reason to believe that disinfection, as commonly practiced, is inadequate, and in this connection I refer to the outbreak of diphtheria in the spring of 1888. Here, it will be remembered, the ward was carefully fumigated with the dry vapor of burning sulphur, and after the fumigations there were found in the apartment quantities of living bacteria which were identical with those found in connection with diphtheritic cases previously treated there.

Dr. Llewellyn Eliot having recommended during the continuance of a case of diphtheria the constant evaporation of turpentine over a water bath for the purpose of destroying the virus of the disease, I myself employed the following prescription for disinfection during my attendance on cases with apparently such good results that I felt encouraged to continue its use:

R	Acid. carbolic,	
	Ol. eucalypti, aa	f ʒj
	Spirits terebinth,	f ʒvj M.

Of this, two tablespoonsful are added to one quart of water, and the mixture placed in a shallow pan. It is to be maintained in a constant state of simmering in the room occupied by the patient.

I think that wherever diphtheria is at all prevalent children who have the least sore throat should be excluded from the schools and compelled to remain at home.

In order to adopt adequate preventive measures the fact should also be recognized that third persons who have had no diphtheritic symptoms themselves and infected apparel or furniture may be the medium of communication.

Nurses and physicians attending diphtheritic patients should avoid as far as possible the infection of their persons and clothing. Physicians in examining the throats of children with diphtheria are very liable to receive upon their faces or clothes particles of the pseudo-membrane or infected muco-pus ejected by the violent cough excited by the examination. This might to a considerable extent be avoided by standing one side during the examination, but I myself constantly carry corrosive sublimate with me; washing my face and hair with a solution of it before leaving the apartment if I suspect I have received any particle of the infectious material upon my person. Physicians thus exposed should also make use of precautionary measures before going to visit other children.

In conclusion, I refer to the paper read by Dr. H. Caillé before the New York Academy of Medicine in January, 1888, on the prevention of diphtheria, in which he stated that occasionally children had a recurrence of diphtheria each spring or autumn. Thinking that such children might perhaps harbor or carry with them the germ of the disease, he selected eight children having a permanent residence who had had repeated attacks of diphtheria, and subjected them to preventive treatment. All decayed teeth were extracted or filled, and the mouth was rinsed after each meal with a solution of potassium chlorate, sodium chlorate, or sodium borate. The solution was also gargled or drawn through the nostrils. With this treatment the children had escaped the customary diphtheritic attacks during the two years that had elapsed since it was undertaken.

VIEWS ON THE PREVENTION OF TYPHOID FEVER*

BY STEPHEN SMITH BURT, M. D.,
Professor of Clinical Medicine and Physical
Diagnosis in the New York Post-Graduate Medical School and Hospital.

During the last three months of the year just passed, there were 413 cases of typhoid fever reported in the city of New York, including 122 deaths; and in Providence, R. I., there were 329 cases and 70 deaths recorded within the same period.

In recounting these statistics I do not so much seek to point a moral in regard to the percentage of deaths as to draw your attention to the many instances of this fever that have been noted in the short space of three months in two of our large Eastern cities, where the intelligence of the inhabitants is certainly not below the average of such places.

From our knowledge of human nature we are justified in concluding that all the cases that occurred during this period were not reported, while, at the same time, it is reasonable to suppose that most of the fatal results were ultimately put on record. And, if these inferences be true, we can easily see how there would be considerable room for error in calculating the ratio of deaths from such reports. But, on the other hand, it is fair to presume, after due allowance for mistakes in diagnosis, that the actual number of cases was in excess of what appears in the statistics.

Now, this evident persistence of typhoid fever in enlightened communities where it should not prevail, to say

*Abstract of paper read before the Medical Society of the State of New York, February 5, 1889.

nothing of the apparently high rate of mortality, which is possibly somewhat fallacious, has led me to consider the facts in regard to the spread, prevention, and treatment of this affection.

Although the topic that I have selected is certainly of great general interest, yet my treatment of it may seem rather trite to many of you because of a contingent lack of novelty. Still, I hold that a thing is but half known which is not generally acted upon, and if we could learn what men believe we must observe what they do.

Typhoid or enteric fever is a preventable disease and quite a needless affliction to the human race. Nevertheless, each year we are called upon to grapple with this malady, and the idea of its extinction is regarded by many as fanciful instead of reasonably feasible. The fault must lie partly with ourselves and not wholly with the rest of the community. Moreover, it is not so much ignorance that we have to plead as a lack of sufficient will to live up to what we know.

If the germ theory of disease is a correct one, and it would seem to be, we ought to follow the example of the surgeons and endeavor to keep out the bacteria. Our task, to be sure, is a much more difficult one than theirs, for these little enemies of the human race come clothed in the garb of peace, and steal into our citadels by the natural paths. The brain of man, however, nurtured by experience each day finds itself better able to solve this problem.

Enteric fever is not contagious in the strict sense of the word, but rather infectious, if such a distinction is allowable. That is to say, it is indi-

rectly conveyed by means of excrementitious matter, but not communicated directly from person to person. A rod-shaped, vegetable parasite, discovered only by the microscope, of the genus bacterium and species bacillus, is the disease germ of this malady. From the evacuations of a patient, after a few hours, these germs multiply, spread, and, what is more, retain their virulent activity for a great length of time and under the most varying circumstances. Yet because of a considerable interval between the passing of a stool and its final putrefaction, at which time the poisonous ptomaine is evolved, immediate contact with the patient is rarely if ever a means of infection.

In such a number of instances of careful search by painstaking and trusty observers, has an eruption of typhoid fever been traced to a source that plainly owed its infection to a previous outbreak of the same disease, that this deduction regarding its origin has been verified and the sequence of cause and effect established. Unpolluted by man, the earth is free from the germs of enteric fever; but, criminally careless or ignorantly neglectful, he scatters the seeds that generate misery and entail suffering upon his fellows.

So far as contagious and infectious diseases are concerned, the public weal might be fitly compared to the strength of a chain, which is no greater than that of its weakest link. Hence the importance of boards of health of inspection, and of quarantine, to enforce the law upon the few for the safety of the many. But short of flagrant disobedience to sanitary rules, there are many minor infringements that work no little injury, for, after all known

precautions have been observed, one may be subjected to the mercy of a thoughtless or selfish neighbor. Consequently, until it is not only granted, but, furthermore, acted upon, that the welfare of our fellow-men is also our own, unnecessary disease and premature death will be the lot of mankind.

The poison of enteric fever is undoubtedly due to living germs that are voided by the patient, which multiply with great facility under favorable circumstances, and which are preserved, it is believed, for years in a congenial atmosphere. Thus, wherever these germs are scattered they form colonies of great potency for evil. Little fine particles, too small to be seen by the naked eye, they are borne by the wind, diffused by gases, or conveyed by means of fluids in various directions. And the victim of their noxious power, predisposed in some way not well understood, takes them into his system through the air he breathes, the fluid he drinks, or the food he eats.

In certain portions of the world the struggle for existence between man and vegetable and animal parasites is so great as to render these regions almost uninhabitable. Indeed, at all times and in all places the price of life is continual watchfulness. And the person who relaxes his vigilance is daily in danger of being carried off by the enemy that lurks among us in microscopic tenuity.

It is pretty well established that the gaseous emanations from sewers, or the water that may be polluted by human excrement, however pernicious, will not produce enteric fever when taken into the system unless they contain the germs or toxic principle peculiar to this malady.

Perhaps of all means of propagating

enteric fever our drinking-water is the most common, because the most likely to reach large numbers of persons. Bright, sparkling, and clear, it may still be the vehicle of endless infection. Ice, too, harbors the bacilli characteristic of this affection. These same germs of disease when cast into a public sewer find suitable pabulum for growth and multiplication, whence they spread to the house by means of the constant diffusion of gases. By the overflow of vaults or the leakage of pipes, they saturate the earth and ebb and flow in the tide-water of the subsoil, from which they find their way into adjacent wells and poison the water, or into neighboring cellars and vitiate the atmosphere. Even the milk we drink is liable to pollution from its strong affinity for water in the laboratory of unscrupulous purveyors. Therefore, while the surgeon, armed with antiseptic weapons of defense, stands guard over his wound, we have literally to scour the country in search of the foe.

As a means of stamping out this infectious disease, first of all comes the absolute need of destroying in every instance the excreta, or the germs therein, as they are expelled from the patient. This is not only a moral obligation, but it should be made a legal necessity. Then, when as much attention is given to the plumbing, draining, and ventilation of a home as, in many instances, is bestowed upon decoration, this dreadful disease ought gradually to disappear.

In the selection of a house in town or country, the water-supply and the drainage should be made the objects of the most careful investigation, for these are the two sources most liable to become vehicles of infection. Sta-

tionary basins should be excluded from all sleeping-rooms, and the waste-pipes in every case should be exposed to view and not buried in the walls or floors. It would be better if the bath-rooms and closets were in a detached portion of the house. Filtered rain-water is the safest for drinking purposes, and the ice employed to cool it should not come into immediate contact with the fluid. Wherever there is the slightest danger of pollution, the only safe means for the prevention of infection is to boil the water. Simple filtration will not destroy disease germs, but, if raised to the boiling point, water is freed from all bacteria, however tenacious of life. In like manner meats and food in general should not be kept in direct contact with ice, nor even in the same compartment. And the outlet of a refrigerator must not communicate with a sewer. All this we know, you say, but do we act upon our knowledge? Do we take pains to see that our patients are as well informed, and that they make proper use of their information? The periodical outbreaks of enteric fever would seem to answer this pertinent question.

Unless these simple precautions are taken in every instance, we have to thank ourselves for the weeks of illness, and perhaps years of sorrow that we bring upon ourselves by our own negligence.

Finally: after all has been done that our present knowledge enables us to perform in the way of prevention, there may come a lapse of caution, a blind, foolish trust that things will take care of themselves, or some stupid member of the community, far removed from our supervision, may subject us unknown to the poison of

enteric fever, and we may fall victims to the malady. Hence, in the present state of imperfection in which we exist, we are obliged to consider the treatment of this disease, which, as I have already ventured to claim, ought not to prevail, and would not be the scourge it is but for our own improvidence.

THE PREVENTION OF CONSUMPTION.*

Although consumption is no longer regarded as a malady with a necessarily fatal prognosis, its mortality remains a deplorably high one. It is quite consonant with modern ideas of prevention and sanitation to search for practicable means of preventing the further spread of this destroyer of mankind, rather than to do battle only for the army of those already doomed.

This aspect of the subject was prominently brought forward at a recent meeting of the London Epidemiological Society, in a communication made by Dr. J. E. Squire. The author held that a review of the conditions on which consumption depends shows that (*The Lancet*) some of the most essential come well within the scope of preventive medicine. The discovery of the bacillus tuberculosis allows us to place consumption in close relation to the class of infectious diseases toward the control of which preventive medicine has already done so much; and experiments have abundantly proved that tubercular disease can be communicated from affected animals to the healthy. That consumption can be communicated from person to person has long been a matter of popular belief, and cases were referred to which

* From the *Medical Record*.

seem to prove that such is actually the fact. The dependence of consumption upon the infective bacillus has been shown by numerous experiments. Consumption, then, depends primarily upon the reception into the body of an infective particle or micro-organism; but a lowered vitality of the tissues places them in a more favorable condition for the development of the bacillus, and thus constitutes in the individual a predisposition to the disease.

Dr. Squire further stated that the bacillus may enter the body: 1. By inoculation through a cut or scratch. 2. By means of the genito-urinary mucous membrane. 3. By the product of conception, and by direct hereditary transmission. 4. By the mucous membrane of the alimentary canal. 5. By the mucous membrane of the respiratory tract, and by the air-cells of the lungs. The possibility of infection through the alimentary tract assumes importance from the prevalence of consumption in animals which are used as food, and from the experimental proof of the infectiousness of the milk of tuberculous cows. The present state of knowledge on the subject points very strongly to the necessity for careful inspection of cattle kept for dairy purposes, and for precautions in using the milk, and possibly also the flesh, of diseased animals.

It was also pointed out that since infection through the respiratory system is more potent, and probably more frequent, than by any other means, and as the risk of infection is intensified by close contact and by the crowding together of sick and healthy, the necessity for free ventilation is apparent, and becomes more so when the predisposing causes are considered. The latter were considered under these

headings: 1. Hereditary predisposition. 2. Influence of air and sunlight. 3. Age and sex. 4. Effect of certain occupations. 5. Influence of locality and habitation, which includes the consideration of climate and temperature, altitude, nature of the soil, density of population, and the condition of dwelling houses, both as regards their construction and the overcrowding of the inmates. 6. Influence of certain diseases, local and general.

In-door and sedentary occupations, as well as those in which much dust is inhaled, are known to influence largely the prevalence of consumption. Much of this among the persons following such occupations is preventable. Here, again, the basis of all preventable measures is found in efficient ventilation. The home-workers—*i. e.*, among tailors—are more difficult to deal with than the factory hands; but public work-rooms, in which men could find convenience for their work, might lessen the evils of the present state of things.

With regard to climate, its influence on the causation of consumption is probably infinitesimal as compared with the effect of density of population. Overcrowding is of two kinds: The aggregation of buildings on a confined area, with insufficient open space around and between houses, and the crowding together of persons within the houses.

The author thinks that laws should be enforced regulating the width of streets, the amount of open space around houses, the minimum height of rooms and size of windows; and efficient inspection of new houses should be carried out before they are allowed to be occupied. Tenement-houses might be licensed to hold a cer-

tain number of inmates, and be liable to inspection. As many diseases which produce a general debility thereby predispose to consumption, general sanitary and hygienic measures framed for the control of these tend to diminish the amount of consumption in a community, and seeing that insufficiency of food, of fresh air, and of exercise, continued anxiety and mental depression, and dissipation must be included among the predisposing causes, the philanthropist may assist the sanitarian in the fight against this widespread disease.

Finally, Dr. Squire believes that the fundamental principles which must form the basis of any successful attempts to diminish the prevalence of consumption are (1) to provide a sufficiency of fresh air in and around dwellings and work-places, and (2) to endeavor to improve the resisting power of the individual by physical training during the period of growth and development, and by exercise and recreation alternating with the work of maturer age. As the effects of consumption in the individual are not confined to a single generation, but are handed down by hereditary transmission from parent to child, any cause which tends to increase tubercular disease among the adult members of a population must be regarded as tending to produce a progressive deterioration of race. It is, therefore, to the interest of the community to allow no time to be lost in commencing a systematic attack against the preventable causes of consumption.

Dr. Squire states his conclusions rather broadly, and his recommendations are lacking in detailed directions for the prevention of the spread of consumption as it now thrives. A pains-

taking disinfection of all suspected matters is certainly not to be overlooked, and will, in time, accomplish much good. Of course all measures of intelligent sanitation tend to diminish preventable diseases, and if consumption is to be regarded in this light it cannot escape its share of suppression. *A priori*, there is apparently no reason why man should not eventually remain the victor in the great struggle between animal and plant life. But before the sanitary millennium arrives many a poor victim will be put to rest, beaten in the battle of human protoplasm against microbic supremacy.

THE HYGIENE OF THE NOSE AND THROAT.

BY DR. CARL SEILER,

Instructor in Laryngology and Lecturer on Diseases of the Throat and Nose at the University of Pennsylvania.

[Concluded from page 122.]

Another frequent source of chronic throat trouble, and particularly of chronic laryngitis is the so prevalent and pernicious habit of cigarette smoking, and it is a well established fact that no habitual cigarette smoker is free from chronic laryngitis. Popular opinion recognizing this attributes the throat trouble to the direct influence of tobacco smoking upon the mucous membranes, or to the paper of the cigarette, or to the nicotine contained in the tobacco, and in consequence decries smoking as harmful in throat troubles no matter what the form of tobacco may be, whether pipe, cigar, or cigarette. The real cause of the trouble, however, is that the cigarette smoker invariably inhales the smoke of the burning tobacco and paper through the throat and wind-pipe into his lungs, and the varied products of

destructive distillation of woody fibres contained in the smoke produce the irritation. That this is so the reader can readily verify in his own person by the effect of smoke from a wood fire upon the mucous membranes of his eyes and throat. Even a moderate exposure to such smoke will make him cough, and his eyes will smart. The quantity of smoke inhaled with every puff from the cigarette is of course not sufficient to produce a very decided effect, but if repeated at frequent intervals during the day it is of sufficient power to cause a chronic inflammation of the more delicate mucous membrane lining the throat and wind-pipe. The cigar and pipe smoker on the other hand invariably "sucks" his cigar or pipe, that is, he closes the posterior portion of his mouth by bringing the soft palate down upon the back of the tongue and thereby producing a partial vacuum in the cavity of his mouth while the opening between the lips is closed by the end of the cigar or pipe, the smoke rushes into the mouth, where it is held as long as the smoker desires, when it is blown out, but never enters the upper air passages. There are many smokers, however, who cannot enjoy a weed without expectorating saliva at frequent intervals, and through this habit, which produces an unnatural dryness of the mucous membranes of the throat, a similar chronic inflammation is observed as that existing in the throat of the cigarette smoker. Smoking of cigars or pipe, therefore, if the smoker does not expectorate inordinately, does no harm to the mucous membranes of the throat or nose, except when the smoke is inhaled or the use of tobacco is carried to excess. In the latter case the nervous system be-

comes affected, and through it any of the organs of the body may suffer.

There are many affections of the throat and nose the consideration of which belong to medical works, and therefore lie beyond the scope of this paper. But before closing these remarks on the hygiene of the throat and nose let us sum up the rules and regulations suggested in a shape which will impress them best upon the memory of the reader.

First, Dress and the temperature of the living apartments should be regulated according to the outside temperature, and should not be too warm, so as to avoid catching cold.

Second, Regulate the diet according to the climate and the season of the year with a view to prevent the accumulation of effete material in the system.

Third, Harden the system by outdoor exercise and cold sponging of the neck, avoiding at the same time getting wet feet.

Fourth, Never wear furs or comforters around the neck and throat, nor turn up the coat collar, even in cold weather, so as to harden the skin and make it insensible to atmospheric influences.

Fifth, Cleanse the nose and throat daily with a mild unirritating alkaline solution, which at the same time should possess antiseptic properties, such as the solution given above.

Sixth, Avoid intemperance or over-indulgence in the pleasures of life, particularly in eating, drinking and smoking.

Seventh, Have plenty of fresh air in the bedroom during sleeping hours, because night air is *not* hurtful to a delicate throat, but air surcharged with carbonic acid is.

Eighth, Use the voice in speaking and singing naturally and without extra force of breath, and without transgressing the natural registers of the voice.

Ninth, Consult a good physician as soon as possible when any discomfort is felt in the throat or nose, because much suffering and time may be saved by doing so.

It is to be hoped that the readers of the ANNALS will profit by these papers, and that much suffering, both mental and physical, may be prevented by living up to the suggestions given therein, for this and only this was the object of the writer in the above remarks on the rather broad and difficult subject of the "Hygiene of the Throat and Nose."

M. CHEVREUL.

This great French chemist is dead, having attained the remarkable age of 103 years. It will be remembered that, three years ago, the centennial anniversary of his birth was celebrated with great festivities in Paris.

A newspaper correspondent recently described a visit to the aged scientist, at that time, as follows:—

M. Chevreul bears his century of years astonishingly well. If it were not for a decided stoop at the shoulders you would scarcely discover in him any of the effects of old age. Although he wears spectacles, he can see without them; he is not deaf, he talks with great ease and distinctness, his hands are comparatively steady, he walks rapidly and surely—in a word, this centenarian is to all appearances an octogenarian. "This afternoon after leaving the institute, where we had quite a long sitting," he began,

"and where I presented one or two memoirs, I was seized upon at the very gate by a photographer and carried off to the *Porte St. Martin*, went up and down four flights of stairs, had my likeness taken, drove over here to my home, and am now ready to have a good talk with you."

What wonderful activity, I thought to myself. "After such a well-filled afternoon many a man of fifty would wish to rest," I remarked, as M. Chevreul seated himself in an arm chair. And then I continued: "How do you account for your extraordinary activity of body and mind?"

"I do not try to account for it. A few years ago, in a preface to one of my books, I thanked my father and mother for the physical and moral force that they transmitted to me. They were both over ninety when they died. I have never touched a drop of wine, but have always drunk water. I do not smoke nor do I eat fish. I take a light breakfast in bed between seven and eight, and my next meal, dinner, occurs at six or seven in the evening. I have never been attacked with a fever for wealth. I care nothing for riches. Perhaps I might say, with your Agassiz, who used to live just across the street there, and whom I knew, that I have no time to make money. I adore science, and I enjoy work. Perhaps some or all of these circumstances—and especially the pure life and character of my parents—will account for my longevity and for my good health on the threshold of my century."

While my host was talking I had an opportunity to observe the room. How in keeping with the simple tastes of its occupant! A broad, hard-wood table without a cover stood in

the middle, laden with papers and pamphlets. Hard by was a plain sofa also filled with reports and manuscripts. In an alcove was a big, old-fashioned bed, for this was both the study and bed-room of the savant. On the mantelpiece were some family photographs and an antique clock, and on the wall the portrait and autograph of Dom Pedro, who, when he was in Paris a few years ago, called on M. Chevreul.

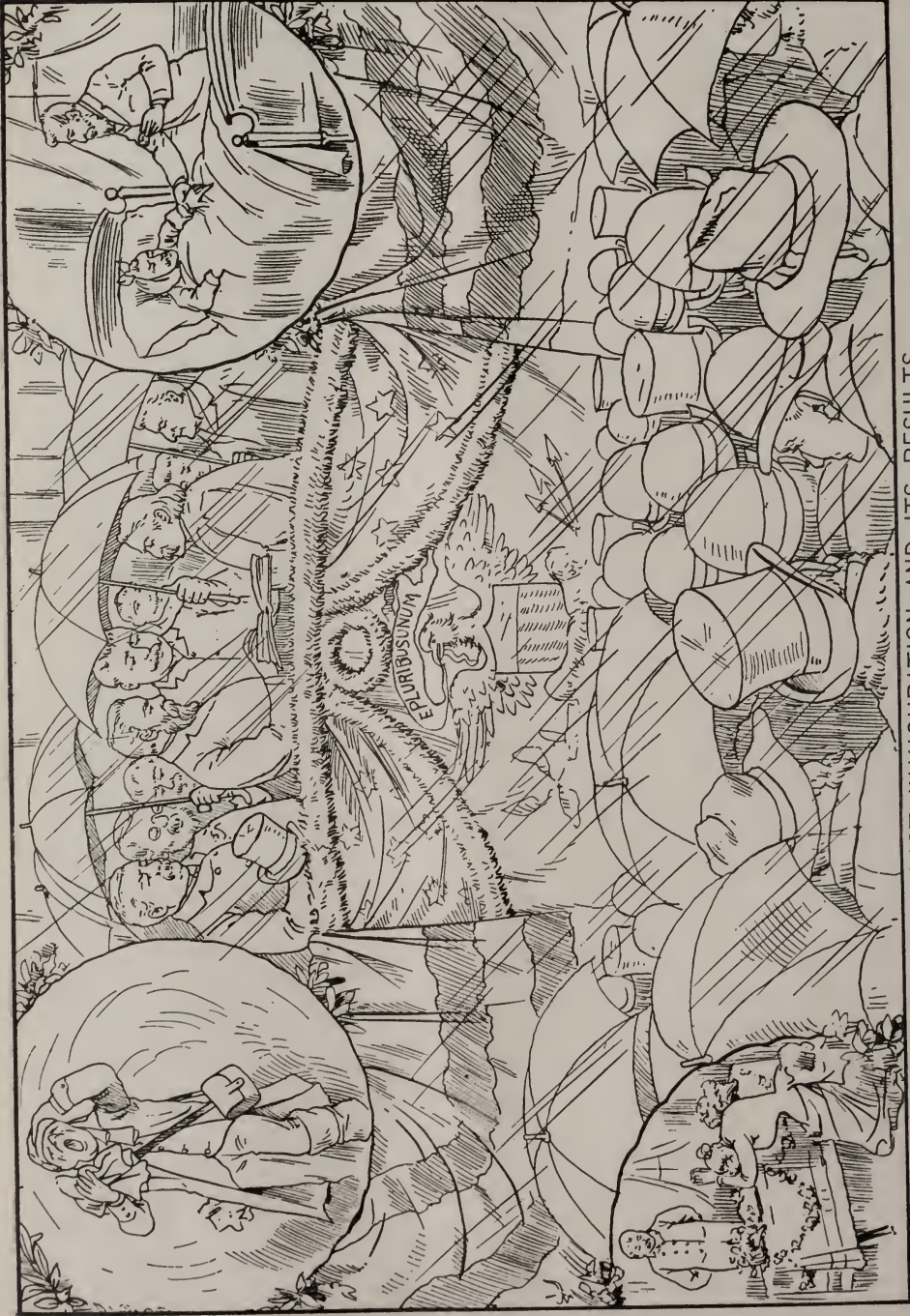
And the attire of the famous chemist was as severe as the furniture of his home. He wore an unstarched shirt, ready-made black outer garments, while his feet were encased in carpet slippers. "The great botanist Jessieu used to occupy these apartments," said M. Chevreul, when he noticed me studying my surroundings, "and Cuvier lived not far away. You see, I am in constant communion with the spirits of my scientific colleagues, who have preceeded me to the grave."

This last remark led me to inquire what was the religious belief of my host. Again like Agassiz, M. Chevreul is a firm believer in a God. "It is impossible for me to comprehend," he answered immediately, "how an intelligent being, and above all a scientist, can deny the existence of a great governing power. I can understand agnosticism, which neither denies nor asserts, but simply says 'I don't know,' but materialism is a mystery to me. There is too perfect an order in nature to accept the doctrine that all this symmetry and usefulness came about by pure chance."

HOW WOMEN REST.—How differently men and women indulge themselves in what is called a resting spell. "I guess I'll sit down and mend these

stockings and rest awhile," says the wife; but her husband throws himself upon the easy lounge, or sits back in his arm-chair, with hands at rest and feet placed horizontally upon another chair. The result is that his whole body gains full benefit of the half-hour he allows himself from work, and the wife only receives that indirect help which comes from change of occupation. A physician would tell her that taking even ten minutes rest in a horizontal position, as a change from standing or sitting at work, would prove more beneficial to her than any of her makeshifts at resting. Busy women have a habit of keeping on their feet just as long as they can, in spite of backaches and warning pains. As they grow older they see the folly of permitting such drafts upon their strength, and learn to take things easier, let what will happen. They say, "I used to think I must do thus and so, but I've grown wiser and learned to slight things." The first years of housekeeping are truly the hardest, for untried and unfamiliar cares are almost daily thrust upon the mother and homemaker.—*New York Graphic*.

DR. G. G. TYRRELL.—We are glad to learn from the *Sanitary Volunteer*, that Dr. G. G. Tyrrell is still the secretary of the State Board of Health of California, which position he has ably filled for several years past. On account of political differences the Governor attempted to remove him, and nominated his successor. The senate refused to confirm the nomination, on the ground that questions relating to the state board of health, prisons, insane asylums, etc., should not be dragged into the arena of politics.



THE LAST INAUGURATION AND ITS RESULTS.

LET US POSTPONE INAUGURATION DAY UNTIL THE 4th OF MAY



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EDITORIAL.

THE DISPOSAL OF SEWAGE.

The publication, in our last issue, wherein we described a new method for the disposal of sewage, based upon the principles of nature, has called forth considerable comment. Among other communications, we have received one from a physician in Canton, Ohio, who, it seems, was already familiar with the method described, and who writes because of a newspaper publication condemning the system, which he desires to have verified or disproven. The newspaper publication referred to claims that the gases of decomposition that are given off from the vent stack descend into and poison the surrounding atmosphere, and that, as a consequence, the prevalence of typhoid and typhus fevers and malarial diseases, has greatly increased in localities where this system has been introduced. Our correspondent asks:—

“May dangers be apprehended from atmospheric influences?” * * *

“This system has many good features—if it has a lame place this is the spot.”

Before deciding to describe this system in our pages, we made a most critical examination of its working qualities, and then set to work to try to find fault therewith. This question of the contamination of the atmosphere suggested itself to us and received due consideration. We felt that the amount of foul gas discharged is so infinitesimally small when compared with the great bulk of the atmosphere into which it is discharged, that it would be absolutely inert, to say nothing of the purification which would at once take place. We felt that the idea that any ill results could possibly accrue from these gases so thoroughly diluted, would be akin to claiming that a teaspoonful of water taken from a hogshead of water into which one drop of alcohol had been placed would produce profound intoxication.

This was our own view, but feeling that we might be in error, we wrote to several physicians in different localities, where we knew this system to be in use, to ask whether an increase in prevalence of the diseases already named had followed its introduction. In no instance does the experience of scientific men give a shadow of support to this unfounded newspaper representation. One prominent physician writes so strongly that we give some extracts from his letter. He says:—

“Your letter of inquiry at hand. It is with some degree of pleasure I write you hastily about my experience with this system, because I have noticed some villainous attacks on the system. I was Health Officer of this city at the time these closets were introduced and in five years I did not hear a single word of complaint from people who lived in the neighborhood of the school buildings, either on account of odor or sickness. During this period the closets were introduced into all of our school buildings. Now we have over twenty buildings

supplied with these closets. As a matter of record our city is exceptionally free from Typhoid, Typhus and Malarial Fevers, and I do not now recall any case occurring in proximity to one of our school buildings. These closets have replaced all others in our school buildings, and I have examined them repeatedly and never found one that allowed the faintest odor to get out into the building. And right here, let me say that this is the only system I know of where inside closets have this record.

To consider the matter scientifically if there are Typhoid, or other disease germs in the excrement, would you not prefer to deliver them well dried, high up in the air, heated by hot air and smoke, rather than deposit them in any moist sewer which is connected to our warm school buildings.

That diseases are scattered by this system is abundantly disproved by acquaintance with the places where they were extensively introduced, as per example, Toledo; whose mortuary statistics are correct, and which show that ours is one of the very healthiest cities in the country.

That this theory is mere moonshine I know from personal observation of the workings of the system here. I have no interest in this matter outside of the interest in humanity, and I write you thus strongly because I have seen base attacks in papers which had no foundation in truth.

As I have definite knowledge on this subject from my own investigations, I cheerfully, for the good of the cause, write you."

We, ourselves, can say, with the author of this letter, that "*we have no interest in this matter outside of the interest in humanity,*" and we have carefully refrained from mentioning the proprietors of this system. Our attention was called to it; when the theory was explained to us we felt that it was a correct one, and when we looked into the matter, we found that the merits of the theory were sustained by the practical working of the system. This is all; it is, we believe, a great step in sanitary progress and we are anxious to give it all possible publicity.

NOTES AND COMMENTS.

"JOHN G. BORDEN, of New York, who spends his winters in Florida, offers a prize of \$1,000 to the Florida city which shall, on July 1st, 1889, present the most cleanly appearance."

IN Savannah, Ga., a Citizens' Sanitary Association has been formed, one of the purposes of which is to investigate violations of the sanitary laws and co-operate with the municipal health department.

PATÉ DE FOIE GRAS. — According to M. Moulé, domestic fowls are frequently the subjects of tuberculosis, the disease often involving the abdominal organs. *Paté de foie gras* is sometimes almost a pure culture of tubercle bacilli.

THE epidemic of yellow fever in this country in 1878 cost 25,000 lives and \$200,000,000, as Dr. W. E. Forest stated at a late meeting of the Academy of Medicine, New York; and he fears the figures for the coming year will equal those of last year.

ISOLATION IN DIPHTHERIA. — Speaking of the necessity of isolating cases of diphtheria Dr. Jacobi says, according to the *Sanitary Inspector*: "If the rich would but remember that their children would be affected through the many links between them and the poor (servants, messengers, schools, dresses brought home from the tailor or seamstress, or purchased in the stylish and expensive establishments which give out work to tenement working-people) their very egotism would compel them to do in the public interest what humanity does not urge them to perform."

SANITATION IN NEW JERSEY.—The Assembly of New Jersey recently passed a bill prohibiting the disinterment of persons who die of contagious diseases unless the dead body was originally interred in a hermetically sealed metallic case.

IN the South of Russia a committee of the Caspian Sea fishing firms offers a prize of about \$3,000 in our money for the best pamphlet in English, French, German, Russian, or Latin on the nature of the poison which is sometimes formed in raw salted fish.

AUSTRALIAN RABBITS.—The Commissioner appointed to report on the means for arresting the multiplication of rabbits in Australia, has reported that the experiments made under the direction of Pasteur, with the virus of chicken cholera, are an entire failure.

THE TREATMENT OF CORNS.—Dr. C. McDermott writes to the *British Medical Journal* that a saturated solution of salicylic acid in flexible collodion is an excellent remedy for corns. The corns should be painted twice a day. It takes about twelve days for their complete removal.

YELLOW FEVER RAGING IN SOUTH AMERICA.—A late arrival from Rio Janeiro reports the town of Santos (Feb. 25) pest-ridden with yellow fever. About thirty deaths were occurring daily. Yellow fever and small-pox were also raging with great fury at Rio Janeiro, with deaths numbering thirty a day.

TRAVELLING WITH CONSUMPTIVE PATIENTS.—The sanitary authorities of New South Wales and Victoria

have signified their intention of communicating with the various steamship companies with a view to action being taken to avoid the possibility of healthy and consumptive patients occupying the same cabin.

PLANT FRUIT TREES.—It is quite evident that few things add more to the health and comfort of life than an abundance of wholesome fruit, and nearly all fruit is wholesome when eaten at the proper time and in moderation, and the proper time is when it is plucked ripe and fresh from the tree.

THE UNITED STATES CONSUL-GENERAL at Rio de Janeiro says, under date of February 13: "Never in the history of this city has there been known at this season such an epidemic of yellow fever as is now prevailing here. The number of deaths in the month of January was 1713, the largest ever known in one month.

THE FACTORS OF HUMAN HAPPINESS.—Dr. G. P. Conn, of Concord, N. H., thus concludes his recent report:

"It may be added that these are small matters to bring before the honorable city government. This is true; yet the chances to perform great deeds are comparatively rare, and fall to the lot of but very few, while the sum total of human happiness in this world is made up of little things, almost infinitesimal in themselves, yet in the aggregate they make life's work a perpetual sunshine, or a dismal, fatiguing, uncomfortable existence; and while people should not be expected to endure the discomforts of the unsanitary conditions around them, still all must remember that the settlement of personal animosities and neighborhood disputes forms no part of the work of a health officer."

DANGEROUS SODA FOUNTAINS.—

Copper soda fountains are liable to become dangerous (says the *Druggist*) if the tin lining is not properly watched and replated when worn through. A mineral water manufacturer in Vienna was recently fined fifty marks by the police court for having sent out such imperfect fountains. Two persons were taken severely ill after having partaken of carbonated water from these fountains, and on analysis the water was found to contain appreciable amounts of copper.

THE HEALTH-GIVING PARK.—

What sources of health, of pleasure, of comfort the parks are, to be sure. The rich drive and ride in them, the others walk and rest in them. The rich, who drive and ride alone, know very little of the glories of the parks. For the others are reserved the shady nook, the winding path, the rustic seat, the placid lake, the peaceful calm that dominates broad acres, a quiet made noticeable by interrupting chirp, by call of robins to their mates, by sneezing squirrel and jump of rabbit.

FOUR GENERATIONS UNBROKEN BY DEATH.—From the *Lewiston Journal* we learn that James Scribner, of Waterboro', Me., is now in his ninetieth year, and his wife is nearly of the same age. The couple have been married for sixty-five years, and have three children living, the oldest of whom is upward of sixty years of age. These children have children and grandchildren, and the remarkable fact is that no death has ever yet occurred in the line of the descendants from Mr. and Mrs. Scribner to their great-grandchildren.

THE EVANGELIST AND THE QUACK.

—That is a good story from West Virginia about an evangelist who went over the State painting upon rocks. "What Shall I Do To Be Saved?" A patent medicine advertiser followed him and under the question added this reply: "Use Blank's Cure for Consumption." When the text painter heard of the patent medicine man's pernicious activity he went over the ground again and painted below the advertisement: "And prepare to meet thy God." The medicine man will find it hard to beat this.

WHAT A WOMAN SHOULD WEIGH.

—If 5 feet in height, 100 pounds.

If 5 feet 1 inch, 106 pounds.

If 5 feet 2 inches, 113 pounds.

If 5 feet 3 inches, 119 pounds.

If 5 feet 4 inches, 130 pounds.

If 5 feet 5 inches, 138 pounds.

If 5 feet 6 inches, 144 pounds.

If 5 feet 7 inches, 150 pounds.

If 5 feet 8 inches, 155 pounds.

If 5 feet 9 inches, 163 pounds.

If 5 feet 10 inches, 169 pounds.

If 5 feet 11 inches, 176 pounds.

If 6 feet, 180 pounds.

I, 6 feet 1 inch, 186 pounds.

New York Evening Telegram.

WOMEN WAGE-EARNERS.—Mrs.

Flora E. Haines has been employed during the past year by the Maine Labor Commission to gather the statistics concerning women wage-earners. She finds in that State over fifty different employments in which women are engaged, ranging from cotton and other manufactures to the professions. By far the greatest number are employed in manufacturing, there being about 7000 thus employed. The average weekly salary is \$8, and one

maker of portraits in crayon gets \$1600. One woman is the proprietor of a prosperous newspaper; another owns an extensive orchard; there are a dozen regularly endorsed physicians in practice, and three ordained ministers, all Universalists.

ARSENICAL POISONING FROM GREEN CANDLES.—At a children's party in London, last Christmas, a number of the little guests, as well as several of the adults, were seized with curious and inexplicable symptoms, which could not be traced to the indigestion of any particular food or liquid of which they had partaken. Attention was then drawn to the candles on the Christmas tree, many of which were green, and these, when submitted to analysis by the county analyst, proved to contain Scheele's green, the red candles, moreover, being colored with vermilion.

THE DANGERS OF SUMMER HOTELS.—Last summer a party of ten persons stopped at a hotel at French Point, Lake George, (says the *Med. Bulletin*,) and shortly after leaving a number of them were taken sick. At the time of writing no less than four out of the ten, all living in different parts of the country, had died after a few weeks' illness. Physicians cannot be too careful in suggesting a location for their patients during the summer holidays. They may unwittingly send them to a badly constructed hotel to discover, when too late, that they have contracted typhoid fever.

THE ASCENT OF MAN.—In view of the recent assertion that the upright position of man had something to do with the development of disease, the

following note from the *Journal of Comparative Medicine* is interesting: "According to Dr. J. Sutton, animals are not free from certain diseases thought to be referable in man to his erect position. One-fourth of the female monkeys dying in the London Zoological Gardens have displacement of the womb, and the same disease occurs in the lioness, tapir, Cape hunting dog, antelope, etc., and in domesticated mammals. Two cases of rupture in monkeys are recorded, and the disease is said to be common in horses."

HOW TO KEEP YOUNG.—Keep cool.

Sleep abundantly.

Take an afternoon nap.

Eat when you are hungry.

Sympathize with the children.

Don't worry about growing old.

Think "good morning" every sunrise.

Become interested in some one beside yourself.

When a bit of fun presents itself, enjoy it.

Interest yourself in music.

Do the work of to-day without fretting about that of to-morrow.

Shoulder only your own responsibilities.

Don't worry over your neighbor's curtains or clothes lines.

MILKMAID'S CRAMP.—Dr. Remak was recently enabled to bring a case of true milk-maid's cramp before the Medical Society of Berlin. The malady was originally described and classified by Basedow. It is a form of muscular inco-ordination analogous to that of writers, ironers, and cigarette-makers, and involves principally the

median and superficial radial nerves. In Dr. Remak's case both hands were affected with spasmodic contractions on attempting any kind of movement, but particularly that of prehension. The patient had for some weeks been obliged to milk uninterruptedly for several hours daily, and is now quite incapacitated from following her occupation. As a general rule the symptoms in these cases take a much longer time to develop.

NURSING INFANTS WITH ASSES' MILK.—The public charities of Paris, says the *Scientific American*, under the advice of the physicians have substituted for the milk of goats that of asses, and have installed an ample yard near the pavilion of the rickety and scrofulous children, which is separated only by a short covered passageway. A very picturesque scene is the spectacle of the lactation of the infants in this enclosure every morning. The women that have charge of the animals hold the children in such position that they can suckle the docile animals, which they do with avidity. The administration d' Assistance Publique has calculated that one young ass is able to lactate abundantly for nine or ten months.

DIPHTHERIA FROM THE BITE OF A PATIENT.—The *Med. Bulletin* tells us that Dr. Williams, of Mount Carmel, Northumberland County, is suffering from a very strange and serious injury, and one that may prove to be fatal. One of his patients was a little girl suffering with diphtheria. The case was a very malignant one, and the Doctor in his examination was compelled to thrust his finger down the little one's throat. No sooner had he

gotten the finger in the child's mouth than down came its little teeth and the Doctor received a good, hard bite. Nothing was thought of it at first, but it was not long until the hand began to swell and become very painful. Every effort was made to check it, but without avail, and the swelling extending to his arm, he was compelled to take to his bed, where he lies now in a very precarious condition.

SAVE THE TREES.—All other things being equal (says the *Manufacturers' Record*), that place whose streets are lined with stately trees, whose lawns and parks are thus adorned, attracts and holds new-comers much more than another where the comfort of shade and the beauty of forest reminders is lacking. It is a very simple matter for a civil engineer, when running lines for streets and avenues, to keep in mind the desirability of saving trees enough for their decoration, and, when his lay-out is completed, to mark those that are to be retained. The chief beauties of New Haven, of Cleveland, of Augusta, of Savannah, of Newberne, and Asheville, and scores of other well-known cities, are the long lines of elms, maples and other trees on the sides or in the centres of their principal thoroughfares.

A BISHOP ON BOXING.—A clergyman in the East end of London having denounced boxing as an unchristian exercise, the Bishop of Bedford has said: "I can see no possible harm in boxing. It is capital exercise and calculated to promote good temper and self-control. I do not know why every man should not know how to defend himself."

NOXIOUS GASES.—The recent lecture of Colonel Thomas Shaw, (says the *Harrisburg Telegraph*) on the subject of the discovery of noxious gases in coal mines, was as interesting as the subject is important. The machine by which he proposes to detect the presence of noxious coal gas is the result of thirty years labor, and his effort was to demonstrate its utility. This he did to the entire satisfaction of those who heard him, and who were deeply interested by his logic and great knowledge of coal gases, the means for their detection, and the applicability of his machine. It prevents disastrous results to miners by giving them warning. As the greatest loss in coal mines is due to the sudden and unexpected presence of gases, if this machine will reduce in any degree the danger, it ought to be adopted in every mine in the State.

LEAD POISONING.—Dr. F. P. Kinicutt reports two unusual cases in the *Medical Record*. The first patient was admitted to St. Luke's Hospital suffering from lead colic and "wrist-drop." He had been employed as a florist, and on investigation by Dr. Vaughan, the house-physician, it was found he had been in the habit of biting off the ends of the tin-foil used as wrappers for hand-bouquets. The tin-foil used for this purpose contained as much as eighty per cent. of lead. There was no history of other sources of lead-poisoning. The second patient was admitted to the hospital suffering from lead colic, and presenting a typical blue gum-line. He had been in the habit, for several weeks, of drinking beer from bottles which, he said, were cleaned by his employer with lead shot.

WASH YOUR HANDS.—Cases of infection, says the *Sanitary Era*, that could be accounted for in no other way, have been explained by the fingers as a vehicle. In handling money, especially of paper, door knobs, banisters, car straps, and a hundred things that everyone must frequently touch, there are chances innumerable of picking up germs of typhoid, scarlatina, diphtheria, small-pox, etc. Yet some persons actually put such things in their mouths, if not too large! Before eating, or touching that which is to be eaten, the hands should be immediately and scrupulously washed. We hear much about general cleanliness as "next to godliness." It may be added that here, in particular, it is also ahead of health and safety. The Jews made no mistake in that "except they washed they ate not." It was a sanitary ordinance as well as an ordinance of decency.

NECESSITY OF MEAT AND MILK INSPECTION TO PROTECT HUMAN HEALTH.—Dr. George C. Strawbridge addressed the College of Physicians last month on the subject of "Tuberculosis in Cattle," aiming to show the wide prevalence of the disease, its infectious nature, and the great danger which exists of the disease being transmitted to man in meat eaten and milk drunk. Dr. Strawbridge concluded that 31 $\frac{1}{4}$ per cent. at least of all cattle killed in Philadelphia had tubercular disease. He said that in Philadelphia, with the exception of an insufficient inspection of milk, the whole matter is utterly disregarded. In conclusion, a resolution was offered as coming from the College of Physicians, recommending legislation to secure healthy beef and milk. To

this end the methods suggested were to examine cattle for slaughter, both while alive and in the process of slaughter, and to examine milch cows as well as the milk itself prior to sale.

CONSTIPATION A CAUSE OF CATARRH.

—Dr. N. R. Gordon, of Springfield, Ill., thinks (*Atlanta Med. and Surg. Jour.*) that perhaps 90 per cent. of cases of catarrh are due to constipation. If the constipation is obstinate, the catarrh is also, and only yields to treatment when the former has been relieved. The forms of diet that produce constipation consist in large quantities of rich and highly-seasoned food. The increase in the annual consumption of sugar is simply enormous, and has much to do with the prevalence of catarrh. The common exposures, such as draughts of air, damp feet, etc., are only exciting causes, and as such are responsible for the production of acute catarrh; but the kind, variety and quantity of the food is responsible, in a great measure, for the functional inactivity of the digestive organs, and consequently the direct cause of catarrh.

VACCINATION.—That obtuse fraction of the community (says the *American Analyst*), which prides itself upon blind opposition to vaccination, might be moved to a more liberal attitude on the subject if it would condescend to look into the results that have been reached under its practical application. In Paris, for instance, where the law requiring vaccination is feebly enforced, the mortality from small-pox ranges from 136 to 10.1 to the 100,000 inhabitants, while in the principal German cities, where the vaccination laws are rigidly enforced, the death-rate is

but 1.44 to the 100,000 inhabitants. London, under compulsory vaccination, has a death-rate from small-pox of but 0.6 to the 100,000 inhabitants. On the other hand, in the Canton of Zurich, in Switzerland, since the compulsory vaccination law was repealed in 1883, the death-rate from small-pox has risen steadily from 8 to 85 to the 100,000 inhabitants.

COMFORT OF CHINESE CLOTHING.

—"A Chinaman is not pretty to look at and his clothes do not fit him like the traditional 'paper on the wall,' but I think his attire the most comfortable in the world," said a man recently. "To begin with," he resumed, "the Chinaman wears a soft, low-crowned, broad-brim felt hat, which is easier on the head than a stiff derby or silk hat and a greater protection to the eyes. Then his neck is dressed more comfortably than ours, too. He wears but a single band around the neck, or two at the most. Have you ever counted up what we wear? No! Well just figure it out. The undershirt band is one, a possible chest protector is two, a shirt band is three, a collar is four, a necktie is five, a vest collar is six, a coat collar is seven, an overcoat collar is eight, and a neck scarf sometimes makes the total nine—nine bands around the neck. What a chance for respiration! Yes, the Chinaman's rig is more comfortable."

A CAUTION FOR CONSUMPTIVES.—

The *Sanitary Era* tells us that Dr. Tyrrell, in a late bulletin of the California State Board of Health, quotes Dr. Cornet as "of the opinion that the patient is by indiscriminate expectoration even more dangerous to himself

than to his surroundings ; that he can poison himself, and that the inhalation of a few bacilli more, and consequent starting of fresh foci in his lungs, may determine the speedy end of his life." It can be seen how very important it is that the expectoration of all consumptives should be speedily disinfected, especially in hotels, pleasure resorts, and sanitariums which invalids seek for health's sake. Until this is methodically and effectually done, we can hope for no advance in the limitation of a disease which is preventable, and which, Dr. Cornet says, kills one-seventh of the population.

INTERDICTION OF PUBLIC EXHIBITIONS OF ANIMAL MAGNETISM.—In a report to the Belgian Academy of Medicine, Maison recommends the prohibition of public exhibitions of hypnotism—a much neglected bit of advice. In the report are mentioned five remarkable cases in which the first attempts at hypnotism developed epilepsy ; also the case of a magnetizer who acquired such a taste for hypnotizing that he became a monomaniac on the subject. Another unpleasant feature about hypnotism is shown in the following case, which had not been described by writers previous to Maison. The servant of a doctor, who had been hypnotized by her employer, went into the service of another man, who once accused her of theft ; a doctor, who suspected that the servant was a somnambulist, hypnotized her, and by this means ascertained that she never had any intention to steal, but that merely during somnambulism changed the position of some objects which she thought were not safe, and which she forgot when she awoke. The judge learning these

facts, acquitted the woman.—*Bruxelles Gazzetta Medica de' Torino.*

A HEALTHY BODY AND A CLEAR BRAIN.—A young man who has a healthy body and a clear brain, and a leisure hour or two in every day or evening, and the stuff in him to control and use his possessions wisely, has capital which can be worked for nobler and more certain results than he who is born into moneyed possessions, but who has inherited a muddy brain, and a will that is flabby and limp. Brains, with reasonable health, possessed by those who know how to cultivate and use them, have always been and always will be the most productive capital the world has ever known. The greatest names in history, the brightest deeds of fame, the grandest discoveries of science and the most princely fortunes have come from well-invested brains, and in most instances the prizes have been won by those who in early life had nothing to work with but brains, and what few leisure hours they might borrow from the night, when others, more weary than they, were sleeping.—Ex.

SELF-PURIFICATION OF WATER.—“In the performance of our duties (says the New York State Board of Health), we meet on every side the popular and widespread belief that if the volume of the natural stream into which the sewage is discharged be only a few times greater than the volume of such sewage, a spontaneous purification of the running water will more or less speedily take place, and render the stream suitable for all domestic purposes. The fact is, however, abundantly proved that the noxious qualities of polluted water are

not removed by a flow of many miles in an open channel, even though the water may have become thoroughly clarified by the complete sedimentation of the solids originally held in suspension, and, hence, also that any stream which is defiled with putrescent animal matter, especially such as is derived from human beings, cannot safely be employed as a source of potable water supply. The State Board of Health has accordingly used every effort to bring about a more rational method of sewage disposal wherever it has been called upon to interfere in the interest of the public health, and in a few instances these efforts have happily been attended with some degree of success."

HOW TO TREAT THOSE WHO ARE OVERCOME WITH GAS.—Several suggestions were made by different speakers at the recent meeting of the American Gas-light Association at Toronto. The most practical were those quoted on the authority of a prominent physician :

1. Take the man at once into fresh air. Don't crowd around him.
2. Keep him on his back. Don't raise his head nor turn him on his side.
3. Loosen his clothing at his neck and waist.
4. Give a little brandy and water—not more than four tablespoonfuls of brandy in all. Give the ammonia mixture (one part aromatic ammonia to sixteen parts water) in small quantities, at short intervals—a teaspoonful every two or three minutes.
5. Slap the face and chest with the wet end of a towel.
6. Apply warmth and friction if the body and limbs are cold.

7. If the breathing is feeble or irregular, artificial respiration should be used, and kept up until there is no doubt that it can no longer be of use.

8. Administer oxygen. — *Phar. Record*.

EARLY RISING WRITERS.—The veteran historian Bancroft does his work in the early morning. He is at his desk at 6 and leaves it at 9 A. M., having done his stint. I should like to ask Mr. Bancroft if this was his habit when he was in his twenties and thirties or even his forties. When they arrive at his present age, all men, or nearly all, are early risers. They do not require as much sleep as younger men ; they may go to bed late, but they rise with the lark. Mr. Bancroft, however, retires early. Ten o'clock finds him snugly tucked between the sheets.

The recent candidate for the vice-presidency, the Hon. A. G. Thurman, though he retires to his room at an early hour, usually reads until after midnight ; yet he sees the sun rise every morning. There are few young writers who could follow Mr. Bancroft's plan with success. I heard a woman of letters say, not long ago, that she was never fairly awake before noon and that she was wide awake at midnight. It would be utterly impossible for a person of her temperament to sit down to write at 6 o'clock in the morning.

TO DETECT ARSENIC IN WALL PAPER.—The manufacturers of this dangerous agent have, according to the *British Medical Journal*, recently renewed their activity, on finding that the public had ceased to be on the alert, from being led to believe that

poisonous colors were no longer used in the manufacture of wall papers. As a simple test for arsenic in wall paper, an ordinary gas jet is turned down until the flame is wholly blue. A narrow strip of the paper suspected is cut, and the edge brought into contact with the outer edge of the gas flame, when a gray coloration, due to arsenic, will be seen in the flame if arsenic be present. If the paper is burned a little the fumes that are given off will have a strong garlic-like odor, due to the vapor of arsenious acid. At the charred end the carbon will most probably be colored a bronze red. This is copper reduced by the carbon. The copper is next slightly oxidized by the air, and on placing the charred end a second time not too far into the flame the flame will now be colored green by copper, for copper arseniate is commonly used in preparing wall paper.

THE FLORIDA STATE BOARD OF HEALTH is now, a reality; We have not seen a copy of the act, and do not know its conditions and provisions. The Board consists of three members, who will select from the State at large a secretary and an executive or health officer, the latter to be a physician. Whether the emoluments of the officers will be sufficient to warrant them in giving the proper attention to their duties we do not know. As a general rule such is not the case. Governments cannot expect to have offices properly filled so long as private enterprise is allowed to outbid the public services. Yellow fever cost the State of Florida millions of dollars last summer; it can never recover that money, but by paying efficient men to

look after its health it may avoid the loss of millions in the future.

“THERE'S NO HARM DONE.”—The following song is said by the *Hospital Gazette* to be popular just now among medical students of Dublin and London. There is a good deal of a moral in the lines:

I extracted the wrong tooth, but there's no harm done;
 I like to tell the truth, when there's no harm done.
 The patient never knew if I pulled one tooth or two,
 And he still has got a few, so there's no harm done.

I once made a patient lame, but there's no harm done;
 And he'll never be the same, but there's no harm done.
 He thinks it was his fate that he took advice too late,
 For a train he's often late, but there's no harm done.

I put out a patient's eye, but there's no harm done;
 He thinks it was the fly, so there's no harm done.
 In place of Atropin I dropped in Winter Green,
 But, of course, it wasn't seen, so there's no harm done.

Once I gave too big a dose, but there's no harm done;
 I request you'll keep it close, but there's no harm done,
 Up the medicine he threw, or shouldn't I look blue,
 What I tell you is quite true, and there's no harm done.

THE PROFITS OF A SANITARY INVESTMENT.—Less than ten years ago Memphis, Tenn., seemed to be a doomed city, says the *Northwestern Builder*. The population had shrunk twenty per cent. in a few years, and

real estate had decreased in value, all because the city was scourged by disease. The panic-stricken people, looking upon the place as doomed, had surrendered the municipal charter. But about 1880 a complete drainage system was constructed, and, with its completion, health and prosperity commenced to return. To-day, the *Memphis Appeal* estimates that in the last twelve months \$5,000,000 have been put into public works there by foreign and local investors, a bridge across the Mississippi is under construction, new banks, club buildings, a union depot, etc., are being built, the cotton receipts have about doubled on those of nine years ago, and the population has increased in nearly the same proportion—all because it was finally realized that to prosper a city must first of all use those precautions against epidemics and diseases which sanitary science has placed at its disposal, and render its surroundings as healthful and inviting as they can be made. This done, ordinary business energy and push will do the rest, as the present prosperity of Memphis proves. There drainage saved a dying city.

WATER FOR THE BABY.—A physician being called upon to visit a sick child, found the babe in apparently good health, but crying and struggling continually as though suffering extreme pain and anguish. The mother stated that the child was desirous of nursing continually, and in order to quiet it she had been obliged to let it nurse as often as the crying paroxysms came on. When that failed to quiet it, paregoric or soothing syrup had been administered.

“When did you give the babe a

drink of water last?” inquired the physician.

“I don’t remember,” replied the mother. “I seldom let him drink any water. Does he need it?”

“Need it!” exclaimed the doctor. “Why should he not need it as much as you? The child is suffering from thirst—nothing more.”

He accordingly called for cold water, gave the infant a few tablespoonfuls, and it immediately ceased crying and fretting, and soon went peacefully to sleep, enjoying a long, refreshing slumber, the first for many hours. Mothers and nurses should remember this. (says *The Sanitary Volunteer*.) Infants who nurse may often suffer torment for the lack of a drink of water. Often a child cries from nothing but thirst; therefore use common sense, and instead of dosing it with poisonous compounds, give the little sufferer all the water he wants.

CARRY YOUR OWN SOAP.—“Among traveling men,” said a physician recently, “at least one in fifty has a skin disease of a more or less serious nature, and its cause may almost invariably be traced to hotel soap. Every person who has had occasion to be a hotel guest, no matter where, is familiar with the much-worn cake of soap that lies in wait for him on the washstand, sometimes in a not over-clean soap dish, and frequently glued to the cover of the stand, according to the whim of the chambermaid. You haven’t the slightest idea in the world who used the soap last, and very few persons ever gave the matter a thought. It would be an easy-going individual and one singularly indifferent to considerations of cleanliness, who would for a moment think of using a towel

that might have been used by the previous occupant of a room at a hotel, but the instances are rare where the same guest will hesitate to use the soap he finds in the room, although it may scarcely be dry from the ablution of the last person who used it. The travelling man does not stop to think that the hotel soap is unexcelled as a distributor of cutaneous diseases, and frequently those that are difficult of eradication. The man who stops habitually at hotels here, there and everywhere about the country, and does not carry and use his own soap, deliberately courts the contracting of what may be a most distressing and offensive maledy."

THE ODOR OF SOUND MEAT.—In the normal state the flesh of every animal has its own characteristic odor. Beef has a special insipid kind of smell, modified, by the different modes in which the animals have been fed. Thus it is stated that the flesh and milk of cattle in the polar regions have a fishy odor, because the absence of pasturage obliges the inhabitants to feed their oxen and cows on fish. Veal smells of milk, mutton of wool and sometimes grease. The normal odor of pork is insipid and inoffensive, but when the pigs are fed on offal the flesh has a pale cachectic hue, and an offensive smell and taste. The odor of poultry fed on corn differs from that of poultry artificially fattened. In a diseased state, meat emits a typical odor resembling the breath of feverish patients. This odor is particularly noticeable beneath the shoulder, and in the muscles of the inner side of the leg. The odor should be carefully noted immediately after the incision is made. This should be done by the

inspector himself. When diseased meat is roasted it emits a strong and offensive smell. The fever odor is particularly marked in the case of animals which have suffered from peritonitis, charbon, morbid symptoms following parturition, or with ordinary acute disease. In such cases the smell is recognizable at once, and it is unnecessary to make any incision. "Feverish" meat is always unfit for consumption.

SEEMING SANITARY ANOMALIES.—Occasional anomalies in the sanitary showing of cities cause superficial observers to doubt the importance of sanitary reform, says the *Sanitary Era*. Philadelphia, with the worst water, perhaps, in the United States, has the lowest general death rate of our large cities. But the zymotic rate is exceptionally high, and in typhoid fever, the great foul-water disease, Philadelphia heads the whole list. For the general causes, Philadelphia has a special defence in the quiet and moderate type of life and business impressed upon the city by its Quaker element, and in the wholesome provision of small houses for the employed classes, instead of the tenement hives or single floors in which those classes are confined in other large cities. Canton, China, is another large city in which sanitary regulations are unknown, and the most filthy conditions of air and water prevail, and yet its death rate, so far as known, is said to be not extraordinarily large. Three capital defences, however, can be cited in explanation of the apparent anomaly: the extremely quiet and orderly habits of the Chinese; the careful saving and application to agriculture of every particle of excrement and refuse; and the universal abstinence from water

except as boiled, usually for tea. These apparently anomalous examples, on analysis, turn out to be among the strongest proofs of the vital importance of purified water to public health, even after other leading sanitary conditions are complied with.

A CURE FOR INSOMNIA.—The suggestion recently made in this column in regard to methods of inducing or promoting sleepiness, has been put to a practical test by one constant reader of the *Tribune* with most gratifying results. The suggestion was that sleep could be wooed successfully by a method of counting in this fashion: 1, 2; 1, 2, 3; 1, 2, 3, 4; 1, 2, 3, 4, 5, etc., up to 25. The experimenter relates his experience in the following language: "My plan is not to count rapidly, but to call off mentally one figure with every expiration of breath. A person in good health counts at that rate about twenty a minute. Before reaching twenty-five in this scale, he must count for about sixteen minutes, as the series mounts up to 325 counted straight ahead. But I have found one decided advantage over counting in regular order. That can be done mechanically, without any mental activity whatever. The other method is not burdensome to the mind, but furnishes just enough material to keep the thoughts off other subjects. I often find myself forgetting the number at which I ought to stop and return to one, whereupon I at once begin again where I left off and proceed in order. I can not say this scheme will produce sleep when there is no inclination or impulse in that direction, but when there is even a rudimentary impulse I know it will encourage and increase it. I have tried it a good

many times since I first read about it in the *Tribune*, and it has only failed me twice. Often on waking I will remember that I was not able to count beyond seven or eight before losing myself in slumber. I have never yet counted up as far as twenty. I think seventeen or eighteen has been my limit. I believe that the author of this suggestion has conferred a boon on people who are troubled with insomnia, although it cannot be expected to work in every case."—*New York Tribune*.

THE FAMILY PHYSICIAN OF THE FUTURE.—Dr. Andrew H. Smith, in the April *Harper's*, considers "The Family Physician," in the light of new conditions and advantages resulting from the marvellous advance of the medical sciences. More than ever the family physician is called, because empowered, to be the constant sanitary watcher and guardian of the family, as well as the healer in sickness, and to a great extent instead of the healer and better than the healer. If competent to his profession, he can now detect and baffle the insidious approaches of disease that no learning of a past generation could have anticipated, and that no remedial power then or now could stay after a few months or perhaps weeks of unnoticed progress. He can now expose the deadly secrets that often lurk in the fairest homes, waters, ailments, and surroundings, and prescribe the means by which they may be eradicated or avoided. He can search the condition or tendency of every constitution and of every organ, and take care of them as against errors of regimen, education or action. Briefly, in professional equipment the competent physician now contrasts with the old

doctor much as the little girl put it when asked if her papa practised extensively: "Oh, no! he doesn't have to *practise*—he knows how." Though in reality he "knows how" but a little as yet, and still "has to practise" too much, in the old tentative way, yet comparatively he has become an expert, and is rapidly advancing, and whatever else he doesn't know, he now knows better than to "practise" any more than is absolutely unavoidable. New responsibility, new value, and new honor, are accumulating upon the medical profession, demanding higher aims and standards, and also a better and firmer status for the family physician, as a settled supervisor of the family health, in distinction from the specialist, whom he should call to his assistance at need. The proposition implies a change from the fee system to the salary, and from calling the doctor in sickness to the doctor calling in health, to see that it is preserved, by watchful supervision within doors and without.

THE MENTAL STATE AT THE APPROACH OF DEATH.—Popular tradition has long asserted that just before a drowning person dies he has a kind of visionary retrospect of the principal events of his past life. It is now believed that the same kind of retrospect occurs in other cases than those of drowning. In a recent communication to the Société de Biologie M. Féré gave some interesting details bearing on the mental condition of the dying. In some cases the panoramic reproduction comprises all the events of one's existence, while in others it only bears on isolated and insignificant details. In epileptic subjects this

form of instantaneous reminiscence is also occasionally observed, and this constitutes a sort of intellectual *aura*. The condition in both cases would seem to point to their being due to some sudden alteration in the cerebral circulation, but M. Féré mentions two cases which appear to show that the phenomenon is possibly of frequent occurrence in death under any circumstances. In one case the patient was succumbing to consumption consequent on spinal disease. Consciousness was already lost when, under the influence of the subcutaneous injection of two grammes of ether, the dying man raised his head and talked with great rapidity in Flemish, which nobody near could understand. He became impatient and made signs that he wished to write, and on the necessary implements being brought to him he wrote several lines in the same language. The curious part of it is that the man, though born near Antwerp, had lived in Paris for many years, and he was supposed to have forgotten Flemish altogether. The writing alluded to a debt of 12 shillings contracted 20 years before, and which, as was subsequently ascertained, was still unpaid. The other case was that of an ataxic patient also dying of phthisis. He had lost consciousness, and the pulse was hardly perceptible, when, after an injection of ether, he turned to his wife and exclaimed, "You won't find the pin, for the floor has been replaced;" an allusion to a trivial incident which had happened eighteen years before. Similar occurrences are by no means rare, and it would seem that the reminiscence is usual at death, and that its expression is facilitated by artificial stimulation.—*M. Press.*

A DISINFECTANT FOR FAMILY USE.

—There is no better or cheaper disinfectant for general use in and about the premises than chloride of lime, although it is occasionally objectionable in some places and to some persons on account of its odor, (says the *Sanitary Volunteer*.) This quality should not lead any one to believe that the liberated chlorine, which has such a pungent smell, is in itself of any value as a disinfectant. It may do to cover up other odors, but that is not disinfection. A disinfectant must have the power to destroy minute forms of life, like the germs of disease, and to arrest certain organic and chemical processes, to be of any value. Many of the so-called disinfectants are simply deodorants, that is, preparations which destroy or cover up odors, but do nothing more; hence, applied as a disinfectant, they are of little or no value.

Chloride of lime ought to be obtainable at any drug store at ten cents a pound, and in some places it can be bought for five cents. The best way to use it is in a solution, as follows:

Chloride of lime,	one pound.
Water,	three gallons.
Mix.	

This mixture makes a perfectly safe and efficient disinfectant, and may be freely used in vaults, sink-drains, cesspools, or wherever there is filth requiring a disinfectant. It is also equally valuable for use in disease, to disinfect all matters coming from the sick-room.

The cheapness of this valuable disinfectant should bring it into very general use. Disinfection should not for a moment be regarded as a substitute for cleanliness, but only as one means of securing greater cleanliness

than could be obtained without it. Its use in the sick-room is to destroy immediately all the disease-bearing material that is eliminated by the infected person. For use among the people generally, the chloride of lime solution is probably the best disinfectant that can be employed.

THE GROWTH OF HYGIENE.—“Hygiene, however, is the direction in which the finger-board of future glory seems to me to point,” says Dr. S. S. Turner, U. S. Army, in discussing the question, “Is the Practice of Medicine a Failure?” (*Medical Record*, February 2d, 1889.) “Few people, relatively, require the art of the surgeon. All are intensely interested in the causes which develop disease, and the means of removing the causes or preventing the development. Of course there are certain causes inherent in the race which science cannot remove. It can only point the way, and trust to the slow process of evolution to make man master of his appetites, every one of which, indulged to excess, becomes a source of disease. But man’s environment is more easily controlled, and there is reasonable hope that the plagues and epidemics which have decimated communities in the past will be substantially, if not literally, banished. A widespread epidemic of yellow fever, with a percentage of death below the rate of most febrile diseases, is certainly remarkable, and, in spite of Sternberg and soda, it is too early to give the credit to therapeutics; for did not the negroes say that the colored people who sent for the doctors died, while those who threw ‘physic to the dogs’ got well?”

“The time is fast approaching,” says the *New York Medical Journal*, of

February 2d, 1888, "when hygienic and preventive medicine must supersede in great degree the methods of the old healing art. Less credit given to drugs results in greater reliance on measures that render them unnecessary. And thus a knowledge of limitation becomes an increase of power. It is the physician alone who can lift to a higher level public conceptions of life, death, and disease. In order to fulfil his high vocation of supreme educator—controlling the relations of human life to the outer world—an exhaustive knowledge of all the surroundings of man is essential, a survey of the whole of nature. Without it, the best-intentioned must inevitably fail. To place medicine upon the plane of biology is to give it the only foundation that accords with the spirit of the times. Any effort in this direction deserves recognition and encouragement. When man rises—by means of modern medical instruction—to the momentous cognition that he has power over his own destiny and that of his offspring, life for the masses will begin to be truly worth living."—*Sanitarian*.

YELLOW FEVER IN FLORIDA.—It is with a sense of pleasure and gratification that we note the energetic measures that have been instituted by the authorities of Florida for nipping in the bud this terrible visitor that caused such sad havoc last year. A fatal case of the disease having occurred in Sanford, the Mayor has issued the following energetic proclamation :

"It having been determined by Dr. R. P. Daniel, president of the State Board of Health, that a sporadic case of yellow fever has existed in our city, and to prevent a spread of the disease outside the premises and to allay the fears of the timid, I do

hereby order that a strict quarantine be placed around the building of C. Demont, where the case of pronounced yellow fever occurred, and that every store, shop or place of business of any kind, except drug stores and telegraph office, be closed between the hours of 5 P. M. and 7.30 A. M. each day, and that all assemblages in churches, schools, theatres or of any character are hereby until further notice prohibited.

"It is further ordered that every citizen shall at once put his premises in perfect sanitary condition and disinfect his yards, closets and out-houses. All congregating on the streets should be avoided, and the passing to and fro on the streets at night is forbidden. All good citizens are called upon to assist me in enforcing these measures."

Sanford is now isolated, no boats touching at the wharf or trains entering the city. Surgeon-General Hamilton, in reply to a query as to the ability of the authorities to manage an outbreak, should it occur, says :

"We are much better prepared than ever before. Camp Perry is in such condition that it can be put in operation in twenty-four hours. But it will be much better if we do not have to fit up a refugees' camp. To do this would tend to create a panic in surrounding towns, and that is the most difficult thing for us to control. Since the epidemic of last year Florida has organized a state board of health by legislative enactment, providing heavy penalties for violations of the regulations of the board, and those regulations are admirably adapted for carrying out the purposes of the act. The board is made effective by the imposition of a tax, the receipts from which are set apart as a fund to be used for public health purposes of the state."

"Sanford is about 100 miles almost directly East of Tampa, in Central Florida. I can readily account for the presence of the disease there. It is only six miles from Enterprise, across the lake, where the fever raged last year, and there was uninterrupted intercourse between the places. Sanford was visited by the yellow fever in 1887, when there were 150 cases there, the presence of which was concealed from the authorities."

We will look forward with the greatest interest to this threatened warfare between "Yellow Jack" and Sanitary Science, confident that if the latter side be properly officered (and we believe that it is) the emblem of victory will surely be found upon its banner.

SOME REAL OLD FOLKS. — To judge from the frequent references to old people appearing in the daily papers, from the articles on the prolongation of life in the popular magazines, and from the more or less scientific reports on the same subject in medical publications, this world of ours would seem to be passing through an epidemic of longevity second only in degree to that recorded in ancient times, wherein Methuselah was such a prominent figure.

Numerous instances have been brought out in these investigations of persons who have lived a century and upward, and many of them are so well authenticated as to disprove entirely the assertions of those who hold that human life never surpasses, or even reaches, the term of one hundred years. But these modern instances of longevity pale before those cited in the old records of two or three centuries ago. Many of these records give the dates of birth or of baptism, and of death, of the persons mentioned, and while it is not of obligation to yield implicit belief as to their accuracy, we cannot deny that they furnish us examples of long life far surpassing that usually allotted to man.

In a curious book, entitled "The Code of Health and Longevity," by Sir John Sinclair, published in the early part of this century, we find several portraits of old people, accompanied by brief biographies. Some of these histories, as that of Thomas Parr, or "Old Parr," who is said to have died at the age of 152 years, and is buried in Westminster Abbey, and that of Catharine, Countess of Desmond, who had three or four sets of (natural) teeth, and who made the journey from Bristol to London after she had passed

her 140th year, are among what may be termed the classical tales of longevity, and are familiar to all students of the subject. There are others, however, which are not so well known, although making even greater demands upon human credulity.

The oldest of the worthies figured in this volume is Czartan Petratsch, *anglicé* Peter Zortan, who lived to the ripe old age of 185 years. He was born near Tameswaer, in Hungary, in 1537, and died in January, 1723. He is represented in the picture sitting beside an old ruin, his countenance expressive of the utmost dejection, and looking wearily at a pot in which he is boiling his dinner, for which, however, he evidently has but little appetite. His whole appearance is indicative of the most profound disgust with the world, with whose miseries and disappointments he had had such a long experience.

The climate of Hungary would seem to have been conducive to longevity, for we find the portraits of two other old people who lived and finally died in the same district. These were John Rovin and his wife Sarah. At the time the picture was taken their ages were 172 and 164 years respectively, but how long they survived this period is not known. Mrs. Rovin is represented sitting upon a bench in the open air, while her husband is bringing her something that might be a bunch of bananas, a bundle of fagots, or the head-dress of an Indian chief. They both look rather weary and have lost somewhat of the freshness of youth. Lying beside Sarah is an antique cat that looks as if she might have been a good-sized kitten when the parents of this aged couple were children. They had four children living at that time,

the youngest of whom was a promising lad of 116 years. Time had dealt less gently with the old lady than with her spouse, for while she was in reality eight years younger than her husband, her picture makes her appear several centuries older.

Scotland seems also to have been the home of many centenarians, though but one of them could rival these Hungarians in his length of days. Among these were Isabel Walker, who trod this earth for 112 years, and Peter Garden, who tilled the Lord's vineyard for thirty-one years over and above a century. John Taylor lived a bachelor for sixty years, then took to himself a wife and was rewarded, or punished, for this action by seventy-two years of added existence. The oldest Scotchman, of whom there is any record, was Bisnop Kentigern, afterward beatified under the name of St. Mungo, who founded the bishopric of Glasgow, and who lived to the age of 185 years. The record of his age and of his place of interment is presented in a Latin couplet quoted in Spottiswood's "History of the Church of Scotland."

Very little is said about the habits of these people, to serve as a guide for those who would care to secure an equally long lease of life. Most of them, however, are reported to have been God-fearing persons of a placid disposition and simple tastes, working hard without worry, satisfied with their lot, eating moderately, and sleeping soundly. And, although nothing is said on this point, we dare affirm that they never smoked cigarettes.—*Medical Record*.

CLEAN STREETS.—The *Brooklyn Med. Jour.*, says: "For the first time

in the history of the City of Brooklyn, the asphalt pavements have been kept clean. Under a special arrangement with the city the firm of Cranford & Valentine has undertaken to keep the streets thus paved free from dirt, and has succeeded. Until the recent snow came the plan was admirably carried out, and it was demonstrated that the proper, systematic and thorough cleaning of the thoroughfares of a great city was not an impossibility, but required only honesty of purpose and executive ability. It is refreshing in these days to find a firm of contractors who mean to carry out a contract when they bid for it, and in this as in all other contracts, so far as we know, which this firm has undertaken, the specifications have been fully carried out.

The asphalt pavement properly laid as it now exists on Montague, Clinton and other streets, is, in our judgment, the perfection of a street pavement. One who has not lived adjacent to such a pavement cannot appreciate the comfort which it brings. Its noiselessness is one of its most important and beneficent qualities. We have frequently been compelled, when visiting a patient occupying a front room in a house situated on a street paved with stone, to cease conversation entirely until an ice-wagon or truck had passed, so great was the din, and we have wondered how the sick could endure such noise as is inseparably connected with such a pavement. When the asphalt pavement was first laid, it partook very much of the nature of a poultice, and a poor poultice at that; but for the past few years the improvement in its condition has been great, and to-day this kind of pavement can apparently be

laid in as permanent a form as that of stone. The policy of the city seems to look toward the laying of stone pavement to the exclusion of all other kinds in all the streets of the city. We regard this as a mistake. While it may be the best for business streets, we believe that for residential streets the asphalt is the kind to be preferred. It is comparatively noiseless, thus contributing largely to the rest, peace and quiet not only of the sick, but the well; it is less injurious to vehicles of all descriptions, doctor's buggies in particular, and can be kept as clean as a parlor-floor, as has been abundantly demonstrated by Messrs. Cranford & Valentine during the present winter."

VINEGAR ADULTERATIONS.—We take the following from *Public Health in Minnesota*:

Vinegar is an important condiment, and owes its value, chiefly, to the amount of *acetic acid*, which it contains, but its fragrance and flavors are due to the various ethers which are developed in its production from good wine and cider. For these, among other reasons, cider vinegar is preferred in this country. Any form of sugar or alcohol, by the aid of the fungoid plant, known to housekeepers as mother vinegar, can be made to yield vinegar. The usual adulterations, in order of frequency, are water, by all odds the most common, coloring and flavoring matters, burned sugar, called *carmel*, *capsicum*, and common salt.

Metals.—Copper, lead, zinc, tin, arsenic, are due to the dissolving power of vinegar on the metal surface of containers. They are very rare in this country, except copper, which has been found in pickle vinegar, added apparently to improve color. The

lesson is obvious. Use no vinegar for table purposes which has been put to other use before.

Copper is easily detected, by leaving a bright knife blade or needle in the vinegar for a little while, when if copper is there it will leave a deposit of the metal on the steel.

Salt is easily detected by the solution of nitrate of silver. A few drops in a half ounce of the vinegar throws down a heavy white cloud if salt is in any amount.

Hydrochloric acid is detected in the same way.

Sulphuric acid.—The common test by Barium chloride is not always reliable, but if it gives a very heavy white cloud, used as the nitrate of silver is used, an excess of sulphuric acid is present.

The most common thing is too much water. Taken with the other tests here suggested, or even without them if the record is below the average 1019, *specific gravity* is an available means of detecting this fraud, and the urinometer, used by physicians, will serve, if none other is available. The best vinegar tests as high as 1022°, good 1020°, 1010°, the weakest 1015°, below which water has surely been added.

Color.—Pure vinegar, from wine or alcohol, should be almost colorless. From cider it is a light amber, and from molasses or inferior sugars, it may be quite dark. Commercial vinegars are colored with *carmel*, as are many alcoholic liquors, because people demand a color, not because it is necessary or useful.

Total solids, easily obtained by evaporating a known quantity of vinegar on a water bath, (or over a boiling tea-kettle,) till the residue ceases

to lose weight, give some clue to the composition of a suspected sample. If a little alcohol is boiled with the residue then poured off and evaporated it will decide the presence of burned sugar, proving it if the residue of the evaporated alcohol is dark colored and bitter to the taste, and which would also detect capsicum, if present.

The metals.—An old but sufficient test for the presence of copper has already been suggested.

LOOK BEHIND.—The Tennessee *State Board of Health Bulletin* says: "An eminent German authority some time gave as a test for the civilization of a people, not their palaces, museums and works of art, but their backhouses. Not a very stylish test, indeed, but yet a very truthful one. For the highest proof of civilization is valuation of life, and where back premises are despised life will be shortened.

All persons who have given much attention to the inspection of premises are impressed with the singularly unwise contrast between the front and rear of city dwelling-houses. The front rooms of our houses are generally but little occupied, being used for show or temporary purposes. The living uses are mainly in the rear. Yet care, attention and cost are devoted to the front, while the rear is too often in an unkempt, desolate state. Just the reverse should be the case. Always use rather than show. With us in America it is always show before use. We lack the English appreciation of comfort. In fact, we hardly have the notion of comfort, and are constantly expending enormous sums for show and discomfort. The money wasted in putting up costly iron fences

separating our dwellings from the streets on which they front would go very far toward redeeming the back yards from unhealthy nuisances.

A municipal ordinance which forbids all animals from running at large within corporate limits would save our principal cities many thousand dollars. To our smaller towns such an ordinance would be proportionately beneficial. Some ten years ago such an ordinance was brought to the attention of the people of Nashville. No one could see any sense in the suggestion. Now citizens of Nashville traveling in the new Northwest, where ideas of progress are eagerly seized, come home speaking rapturously of the extraordinary beauty of the streets, which, having no palings or fences in front of the houses, present a beautiful vista of lawn and shrubs, and allow free circulation of air and sunshine.

None of our Tennessee towns and cities are very old, yet in each and all many contaminated and foul back premises exist. Specially is this true of the older and central portions. Here may be pointed out back lots, hid out of sight, which have been neglected time out of mind. In the course of twenty, thirty, it may be fifty years, these lots have become mere masses of reeking filth, giving out emanations quite as noxious as any sewer gas. And yet right around these lots many people live day and night—in summer time with doors and windows open—breathing the atmosphere thus fouled all the time. Sewer gas! sewer gas! is an old cry. The books and the journals and the dailies constantly repeat it. The fate of Prince Albert, beloved in Britain, and of Secretary Manning, honored throughout America, give point and emphasis to this

everlasting reiteration. And, verily, sewer gas is no joke, seeing how many houses, more especially of the wealthy, are poisoned by defective connections of sleeping apartments with city mains. Nevertheless, in our part of the world, nasty earth gas is a far more potent cause of slow recovery from illness, or of death when recovery should have taken place. Many a time when the skillful physician has been thwarted in his just anticipations the explanation would readily appear were back premises explored.

In many instances these premises, from long continued neglect, have become so foul that no ordinary surface scavenging will avail. The soil is saturated with filth to the depth of ten or twelve inches, and should be removed bodily, or else thoroughly disinfected.

Very often, however, great improvement can be made by removing rubbish, garbage, and other surface accumulations. All this work should be done at once. Thus when the hot weather sets in nothing more will be needed than daily care in preventing fresh accumulations.

Always and everywhere in this beautiful South-land must be urged the supreme importance of cleanliness, and the beneficial influence of fresh air and sunshine all in and around our living and sleeping rooms. God has given us a paradise. Too often we make it a pest-house."

SANITARY "BOOMERS."—The settlers of the new territory of Oklahoma, are, evidently, believers in hygiene, for at a recent town meeting in Guthrie it was resolved to make all streets eighty and all alleys twenty feet wide.

MR. HENRY C. GIBSON has given \$2500 toward establishing a Chair in the Department of Hygiene of the University of Pennsylvania.

PASTEUR ON DIPHTHERIA.—According to the Paris correspondent of the *New York World*, Pasteur claims to have discovered the causative germ of diphtheria, and says that he is now looking for an antidote. We fear that Pasteur's labors are not wholly in the right direction, for we are coming strongly to believe, as we stated in our last issue, that our efforts towards prevention, to be effectual, must tend towards a modification of the soil (the human body) so that these germs will find it uncongenial to them, rather than towards any special agent calculated to destroy the germ after it has entered the body.

BUFFALO BUGS. — C. K. Kelley, thus writes to the *Sanitary Volunteer*: "In your last issue is an article on Buffalo bugs. Last spring our village was full of them, and destruction followed in their wake, much valuable clothing, carpets, and other costly fabrics being destroyed or nearly so. Nothing seemed to vanquish them till *common salt* was used (ground table salt.) My housekeeper applied it to carpets by turning up the edges and sprinkling the salt, say for an inch or two on the floor or lining of the carpet. By doing this our loss from the pests was reduced to a minimum, while our neighbors suffered greatly from them, although they used camphor, spt's turpentine, ammonia, and various other things to no purpose."

CORRESPONDENCE.

PROHIBIT THE DISPLAY OF
MONSTROSITIES.

To the Editor of The Annals of Hygiene.

We read your ANNALS OF HYGIENE with profit and pleasure, and believe that its extended circulation would be the means of preserving health to the individual and the public at large. We therefore suggest a matter that seems to come under your jurisdiction. That is the exhibition of the monstrosities that are to be seen not only in halls of amusement, but paraded through the streets as well. Those with deformities of all kinds are unceasingly obtruded upon the gaze of the public. What must be the effect upon unborn children we may only guess. Your readers will remember that monster, the murderer Pomeroy, the boy who took a fiendish delight in cruelly butchering his companions, who, although for years past imprisoned, yet preserves the same ferocity. There was a mystery surrounding the case until it was found that his mother was in the habit of going into the slaughter-house of her husband during the butchery of cattle and sheep, and the horrible impulse of the boy was the effect of his mother's impression in the slaughter house. May not the increase of those bereft of reason, or of the malformations we find so frequently occurring in human beings, be the result of those fearful loathing monstrosities that are paraded at every public place. In the palmy days of Greece and Rome those about to become mothers were placed in a situation where the beautiful in the human being and the beautiful in art was to be seen. Here we have objects half human, half animal—faces of the brute on the body of a human being. There should be a law against the exhibition of anything of the kind under any circumstances, and the pictures also prohibited.

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TIME OF MEETING,

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Hon. James A. Beaver, Governor of Pennsylvania.

THE ANNALS OF HYGIENE.

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COMMUNICATIONS.

GOVERNOR BEAVER AS A SAN- ITARIAN

It is a most instructive and edifying study for one who is interested in hygiene and who understands the true meaning and significance of the word, to look into the lives of those who have attained great and lasting prominence in worldly affairs. We would draw a distinction between meteoric success and lasting eminence; the one may be, and generally is, a freak, so to speak, belonging to the class of exceptions that tend to prove rules, and is not a form of success greatly to be desired, usually terminating, as it does, in disaster as dire and as marked as the degree of temporary and transient prominence that preceded it. Such names as Poe, Byrön and Boulanger, might serve to point us to instances of meteoric eminence, where the individual has notoriety, not because he has been of any real benefit to the age in which he lived, but because of a publicity, so to speak, attained by the union of certain natural gifts with the most erratic of actions. There are comparatively few right-thinking persons who are at all envious of the place in history held or to be held by men of the class to whom

such as we have cited belong. Then we have the other class, those persons, because of whose existence, the world is better than it was before; those persons whose lives have resulted in improving the status of humanity; those persons who, because of what they have done, will make the world poorer when they die; those persons who, because of a proper interpretation of the reason for their existence in the world, have attained a normal and natural eminence among their fellow-men, that may be honorably desired for and aspired to by all of us.

We have but recently sent up our voices from all parts of this great country to do honor to a man who was a prominent member of this latter class. Who more natural, who more eminent, and who more deserving of the eminence that he attained than George Washington. This country can and does furnish many similar instances of such *earned* success, for in this country alone, of all great nations of the world, *lasting success*, must be earned. In the titled countries of Europe, Asia and Africa, a man, is, so far as his relation to his fellow men goes, just what his father was before him, but with us "inherited eminence" is an unknown quantity, for, a man's relations to his fellow men are just what he himself may please to make them.

We can offer, for the contemplation of our readers, no name so pregnant

with lessons bearing upon this point as that of our distinguished Governor, General James A. Beaver. More than a quarter of a century ago a great and brave soldier, ever since a respected and influential resident of our State, he now occupies by the call of the people, the most honorable position that they can offer to him. And why? Not because he inherits this greatness, as with so much of the titled idiocy and imbecility of European countries, but because on account of his own efforts, as the natural results of the life that he has led, he has been deemed worthy to be exalted to and capable of justly and satisfactorily fulfilling the duties of this high position. We have been led to believe, as the result of our almost constant thought on matters pertaining to hygiene, that, in almost every case where a man or woman has succeeded in attaining that desirable eminence which we have dilated upon, it will be found upon investigation that he or she has led a hygienic life. We want to be clearly understood as to what we mean by a hygienic life. We have always maintained most firmly that such a life does not imply, as many, who do not reflect, seem to think, that we must live by rule; it does not mean that we must go to bed and get up at a certain hour; that we must eat certain articles and must not exceed a given quantity; that we must avoid all that goes to make life pleasant. This is the popular, but is also a most shockingly erroneous idea of hygiene. Our idea of a hygienic life is that it should be a *natural* life; nothing more and nothing less, and that the nearer a person comes to a natural life the nearer does he also come to a hygienic life.

It is from this view that we hold that nearly all truly eminent men are

in reality Sanitarians. It will not always be found that they are well versed in the laws of hygiene; indeed if we broach the subject we will frequently be met with the assurance that they pay no special attention to it; but, if we probe deeper, if we inquire into the life history of these men, we will generally find that, instinctively, if you please, they have led *natural* lives, and we believe and maintain that this fact has had much to do with their material success.

We are all familiar with the importance of a "sound mind in a sound body," (indeed it has become proverbial) for we know that the possessor of a sound mind only can attain eminence, but we are not so familiar with the equally reliable fact, that the sound mind alone without the sound body will not lead its possessor to distinction. The two combined are essential for success and we must perforce admit that he whose life is natural is much more likely to have a sound mind in a sound body than he who leads an artificial existence.

Such a man is Governor Beaver; We are all ready to admit that he has certainly a "sound mind in a sound body," and as the result of our personal interview with him, we strongly feel that he, in a large measure owes this happy combination to the fact that his life has been and is an eminently natural one.

"Well, I don't know that I have ever paid any special attention to my mode of life," was the Governor's reply to our first remarks about his life habits. "Oh! yes, there is one rule that I have always adhered to; when a boy, the importance of securing eight hours sleep out of every twenty-four was rigidly impressed upon me by my

mother, and I have lived up to it ever since." Then by degrees, the Governor recalled one item after another until after we had conversed with him for half an hour we became thoroughly convinced that Governor Beaver is a very natural man who has led a very natural life. This point of sleep is a very strict rule with the Governor. He averages eight hours out of every twenty-four; if he fails to secure the full quota one night, he adds to the next night's rest whatever he has lost the night before.

We have been recently told by Mr. Gladstone that an important secret of his great age and good health is that he never "*takes politics to bed with him.*" Governor Beaver thoroughly realizes the importance of the principles involved in this rule. He does not now and never has, throughout his life, carried his business to his home. He leads two distinct lives; a business and a domestic life, and the one never encroaches upon the other. Very few persons realize the extreme importance of leaving all thought of business behind them when the office is vacated, and very few persons understand that the power to divest one's mind of thought of business when the hours of business have passed is not a special gift vouchsafed only to a few, but that it is a trait that can be acquired by any individual of intelligence with a strong will. This talk of temperament is all nonsense; we believe, of course, that nature endows each of us with certain traits, but we also believe that an individual who will exert the intelligence and will-power that is within him can very materially modify these natural traits and change, to a very great extent, his natural temperament. We firmly believe that if a man will use

his will power he can ultimately so control his psychical nature that he will be able to lay aside the thoughts and cares of business when he leaves his office, no matter whether his business be prosperous or otherwise (for his common sense will soon tell him that if his business be bad, worry will not make it better, while rest, change, recreation and good sleep may bring about that clearer and more acute mental condition that will enable him to turn the current of affairs) and the sooner a man cultivates and secures this trait of serenity and common sense, the sooner will he have learned one of the most important aids to good health and longevity.

Mrs. Beaver has been frequently surprised to hear in some round-about way, of some very important law case in which her husband has been engaged, for the Governor himself would never mention it to her. Indeed, to use the Governor's own words, he only once "took his legal business to bed with him" and that was when he was engaged in three homicide cases, and we are sure that all sanitarians will freely absolve him for this infringement of the laws of hygiene when we consider that it was only an additional evidence of his goodness of heart.

A most important factor in this natural life of Governor Beaver is Mrs. Beaver. The domestic life of the Governor is a *real home life*; Mrs. Beaver is a *real true* woman and to her absolutely is relegated the domestic executive department. On "Capitol Hill" the Governor is Governor; while in the Executive mansion on the banks of the Susquehanna, he becomes as it were, an every-day citizen and Mrs. Beaver is "The Governor." This is as it should be; no interference from

one in the duties of the other ; each supreme in his or her particular department ; while Mrs. Beaver knows nothing about the details of the business of her husband, neither does the Governor know anything about the details of his wife's domestic business.

Old Dr. J. L. Ludlow was accustomed to say that the brain and the stomach were like the two balls of a dumb-bell, while he likened the shaft between them to the nervous connection between the stomach and brain, desiring by this homely illustration to demonstrate the intimate connection between these two important parts of our bodies. That, which Dr. Ludlow reasoned out scientifically, Governor Beaver seems to have fathomed instinctively, for he said to us "a full stomach blocks the brain fire," hence when he has any important mental work on hand his midday meal is a very light one. A most wise precaution this, for it is a physiological fact, that brain activity is opposed to activity of the stomach, and that while the one works the other should rest. We asked the Governor whether he ever experienced any ill-effects from the hardships endured during the civil war. His reply was that he did not, but he added that he was *very careful of himself all through the war, wearing woolen underclothing all through the year*; a fact going to show that personal bravery is not incompatible with personal prudence; this we say because there seems to be an idea that bravery is usually associated with a recklessness that disregards all prudence.

We all know that Governor Beaver sacrificed a leg on the field of battle, but we do not all know that he regards this loss of a limb as a decided benefit

to him so far as his general physical health is concerned, for he tells us that the use of crutches (when they are properly used) is a most excellent means of developing the chest and the muscles of the upper extremity.

We will all admit that a short period of repose, so to speak, a short interval after meals, before we start at or resume work is beneficial, in so far as it allows the process of digestion to become fairly established, but we do not all live up to this admission; Governor Beaver does. After leaving the Executive mansion in the morning, and after dinner, the Governor usually drives in a very round-a-bout way to the Executive Chamber in the Capitol, so that he covers from four to five miles and fills his lungs with good country air and his mind with nature's brightest pictures before he commences the work of the day. To do this he must rise early, for on the morning when we were favored with our interview, it was but a few minutes past nine o'clock when he reached his desk and this despite the fact that he had only left the cars, (after a journey from Washington) but eight hours before.

To-day Governor Beaver considers his physical health perfect and his appearance would indicate that his belief is well founded. Inheritance has not played an important role in the physical history of our Executive. His father died at the age of 35, his mother was only 68, his grandfather at 64 and his grandmother at a comparatively early age; while there is every reason to believe that the Governor, who must now be past fifty, has every prospect of becoming an octogenarian, at least.

In conclusion, we would ask our readers to look about them among those of their friends who have attained

eminence and see whether they are not struck with the truth of the assertion we have made, namely, that of those who have attained lasting eminence, the very large majority will be found to have led natural, that is to say, hygienic lives.

We are firmly convinced that Governor Beaver very directly owes his present exalted position to this fact and we equally believe that one great reason why he has led such a natural life is because he had the wisdom to select such a natural, *womanly* woman for his life's helpmate, and we therefore close by reminding the people of this great Commonwealth, that while they have cause to be grateful that they have such a *natural*, good and wise man for their Governor, they must not forget to honor and thank Mrs. Beaver, for having so materially assisted to make her husband the *natural manly man* that he is.

HEALTHY HOUSE BUILDING.

BY C. FRANCIS OSBORNE,

Consulting Architect, Cornell University, Ithaca, N.Y.
[Continued from page 218.]

There can be no question that the most suitable material for the external walls of a dwelling house, considered from our present point of view, is wood. A stone house, however well constructed, though warm enough in winter, engenders a chill and tendency to dampness in the heat of summer which is far from wholesome, and indeed is likely to induce serious injury to the respiratory organs. Bricks, though more suitable in some other respects than stone, have the disadvantage of being more absorbent, and unless well protected by a coating of paint, take up in every rain storm

large quantities of water, which, on evaporation reduces the temperature of the house to an abnormal degree. Wood, on the contrary, when properly cured and well protected by paint is continually dry, and can be made to exclude the weather more perfectly than any other material. This cannot be said of wooden houses as ordinarily built, but they can easily be made to conform to all requirements by a little attention to improving the methods usually adopted. Frame houses are of course inadmissible within city fire limits, but such a building when standing not nearer than three hundred feet to other houses can be made as safe as masonry structures. Here again some improvement on ordinary methods of construction will be necessary, but the intelligent application of the principle of slow-burning construction noted in the last paper will render the accomplishment of this comparatively easy. Frame houses are most likely to be unsatisfactory in the matter of wind leakage. This is most likely to occur about windows and outside door frames, at the cornice, and at the junction of the main frame with the masonry foundation. The weak points are to be overcome chiefly by the careful and accurate fitting together of the several parts, and a liberal use of heavy building felt between those pieces of the frame most likely to part through the natural shrinkage of the wood. By a careful attention to these points a wooden house may be made perfectly weather tight.*

*As it is not the object of these notes to attempt to enable every house-builder to be his own architect, technical details are not dwelt upon further than is necessary to illustrate the principle under discussion, and to enable the reader to intelligently caution his architect with regard to the more important sanitary aspects of the case.

The exclusion of the chance admission of outside air in the pernicious form of draughts should lead us the more carefully to consider its admission in the more legitimate way of an ample supply of fresh air for respiratory purposes. It is not often that a house-builder is found sufficiently impressed with the importance of this matter to be willing to incur the expense of a complete heating and ventilating plant for a private residence. This would include a small motor, fan, heating coils, and air ducts and exits to and from all parts of the house. More or less efficient methods however may be devised, at much less cost, which, if they are not at all times sure to work, will nevertheless much mitigate the usual state of affairs. Of all such methods, that of indirect steam is the best. By this system, all of the air of the house is heated in the basement and rises through carefully prepared and located flues to the several apartments, whence the foul air is forced by the incoming fresh air by way of exit flues to the roof. If the location of the fresh air inlets is carefully considered, so as at all times to ensure the entrance of an uncontaminated supply, this method is satisfactory for buildings of moderate size, during all weather when artificial heat is necessary. At other times, if it be desired to continue the same method, it will be necessary to heat the *exit* flues to supply the motive power, by means of supplementing any steam coils, or by gas jets; which of course adds materially to the expense. For small houses the same work may be done, though not quite so well, by means of a well constructed hot air furnace, but in larger buildings this system is apt to fail from the difficulty of

forcing the hot air to the windward side of the house during stormy weather.

Another way of using steam is known as the direct-indirect method. It is, at best, a make-shift, as the direction of the air flow is not under positive control; and the direction of the air current may be reversed in unfavorable directions of the wind. It consists eventually of direct radiators placed in each room with air discharged against them from the outside wall. It is evident however that we cannot control the direction of this discharge, and sometimes on the leeward side of the house we may be discharging warm air into the outer atmosphere, the room supplying itself with cold outside air through the exits for foul air.

It must always be borne in mind that every inlet must have its corresponding outlet; otherwise we shall have no constant flow of air. This is why hot air registers often discharge no air into a room, though there may be a hot fire in the furnace. The room is full and there is no exit; consequently no more can enter, until an outlet is provided. Oftentimes the mere opening of a window at the top, if the wind be not blowing directly against it, will suffice to set the circulation in motion again.

An open fire place is generally an efficient outlet if another suitable inlet be provided, and there are some special forms of ventilating open grates which correspond to the direct-indirect principle noted above, which have proved thoroughly efficient in all weathers.

But whatever means is adopted some provision should be made for ventilating all living rooms; this demanded by the present state of our knowledge as to the certainly evil effect upon health of re-breathed air.

BREAD.

—
BY EPHRAIM CUTTER, M.D., LL.D.
NEW YORK.
—

When flour is mixed with water, and the dough is immediately baked, unleavened bread results. The substance of unleavened bread is more solid, less vesiculated and spongy than leavened bread. The vacuoles and anfractuous cavities are many, but they are not so large and evenly diffused as in well made leavened bread. These vacuoles are probably due to the expansion of globules of water and air imprisoned in the dough by kneading. When to the mixture of water and flour alcoholic yeast plants are added, and the dough properly beaten is placed in a lightly covered receptacle in a warm place over night, by morning the dough will be found increased in bulk and sometimes overflowing the pan.

Place the ear near the pan and a soft continuous hum will be heard, much like a swarm of bees. This sound is caused by the evolution of carbon dioxide gas, rising by expansion from below, as its specific gravity is greater than that of the atmosphere. It is caught in the viscid glutinous mass, and expands into bubbles which burst, thus vesiculating the dough. The accumulation of this gas causes an increase of bulk which is more apparent than real. The dough is excavated or hollowed into multitudinous anfractuous, irregular and regular cavities, caves or areolar spaces; which process nicely solves the problem of getting the largest amount of surface into the smallest amount of space. When the dough is baked, these caverns, or vesiculations, are surrounded

by solid walls, which, under the microscope, if the bread is well raised, present a beautiful picture which defies description and pencil.

There is no doubt that alcohol is vaporized and helps the vesiculation. So then we trace the following as causes of the rising of bread:—
1. Carbon dioxide gas. 2. Vaporized water or steam. 3. Vaporized alcohol. 4. Air bubbles expanded by heat.

Besides these physical changes in the dough, the yeast changes the starch into glucose more or less, which process is furthered by the action of the heat in baking. In other words, the bread is made more soluble for the alimentary canal, and the lighter and more spongy it is, the easier to digest.

This change of starch into glucose is the crowning merit of the process of raising bread by yeast. In this respect it has an advantage over the so called baking powders which vesiculate by the liberation of the carbon dioxide gas in the baking, and make the vesiculations just the same as in the yeast process, but there is no change into glucose, or dextrine, only so far as it is done by the heat of baking. For this reason bread raised by baking powders is not so good for digestion as yeast bread properly made.

In the gem cake process, where unleavened dough is baked rapidly in small masses in very hot ovens, the steam formed makes the vesiculations and sponge.

In sponge cake, the eggs are vesiculated beforehand by beating into their viscid substance, atmospheric air with a fork or a machine made for the purpose. When this mass is white

with the air bubbles, it is then stirred in with the flour and sugar, and immediately placed in a hot oven. The expansion of the detained air bubbles makes the cake rise into an elastic, felty body, like a sponge, whence the name is derived.

Crackers and biscuit, bis-twice cuit baked, are made of unleavened dough baked hard. The gain in twice baking is found in a more complete change of the starch into dextrine, and in destroying the yeast more perfectly when leavened dough is used, and thus the product does not grow mouldy so rapidly as the ordinary bread might under the same circumstances of long keeping.

A great many crackers are made in this country by flattening raised dough into thin sheets under iron rollers, thus driving out the alcohol air and carbon dioxide gas, and making the substance solid with starch, gluten and glucose and dextrine after one baking.

Pastry embraces the compositions made up of unleavened bread, eggs, milk, butter and many other materials according to the art of the cook. These are to be avoided in Motherhood as taking up too much time in cooking, and as affording difficult and uncomfortable substances for the alimentary canal to digest.

As a matter of fact, bread raised by yeast is universally used by man from the remotest periods of history. It is the staff of life. Among the cereals that furnish bread, wheat, rye, barley, maize and oat, may be termed the princely grains. *Wheat is the king of grains.* When flour is spoken of, wheat flour is meant. When bread is spoken of, wheat bread is meant. The original wheat bread included the six coats of wheat berry, and there is no

doubt that man thrives on this bread. But as society has developed, an ethical demand has arisen that a superior excellence of bread was incompatible with the dark or black color caused by the coats of the wheat, and so they have been discarded to make bread white in color. Standard flour is made from the parenchymatous portion of the berry, but at the expense of the more nutritive elements.

This yielding to the demands of the physiologically uneducated æsthetical eye has no doubt wrought disaster to the human race.

As to the injurious effects of cake or pastry, the writer thinks them due not to the want of yeast or the presence of the fat (or shortening) but to the sugar and the impoverished flour. For he has found that cakes and doughnuts even, made of the entire wheat flour or the Arlington wheat meal are more palatable and digest better than the same preparations of common flour. When it is remembered that sugar in solution put in a warm and moist place, alimentary canal—in contact with alcohol yeast, most readily ferments, it is easy to see how cake and pastry easily ferment in the stomach and bowels.

PRESENCE OF ALCOHOLIC YEAST IN BREAD.

Examinations of microscopic fields of a $\frac{1}{4}$ inch objective and a 1 and $\frac{1}{2}$ inch eye-piece showed the presence of from 13 to 113 alcoholic yeast plants to one field. Some of these were automobile and moving laterally. All were surrounded more or less by automobile spores actively moving about.

TEMPERATURE OF BAKING BREAD.

This was ascertained by testing a loaf baked so as to have a crust on it

puncturing with a skewer and a thermometer plunged in. The temperature was uniformly found to be 285 degrees fahr. Horsford says 500.

ARE THE YEAST PLANTS DESTROYED BY BAKING?

My wife removed the inside of a recently baked gem cake and stirred it up with water. It was mixed with a cupful and a half of flour, the dough stood in a warm place two days and rose a little as shown by surface cracking and vesiculation inside. The bread made from this sample was heavy, soggy, sour, and tasted badly. The starch grains were broken, macerated, outlines obliterated, much different from ordinary bread. The rising did not equal that of unfermented bread. Had the cake been dough, considerable fermentation would have been expected, so in this case the yeast was evidently destroyed by baking.

THE MAIN POINTS ABOUT BREAD RAISED WITH YEAST ARE:

1. That it should contain all the nourishment that the Creator intended man to get when he ate wheat, rye, barley, maize and oat. If the flour is impoverished the bread is impoverished.

2. It should be properly prepared in all its manifold stages from the field to the table.

3. Specially should it be thoroughly cooked so that the yeast may not harm the alimentary canal nor the lungs.

4. Bakers, cooks, house-wives and others should be instructed as to the folly of sacrificing the solid values of wheat to whiteness and lightness.

5. Wheat bread can be lived on exclusively for forty (40) and forty-five

(45) days without disease therefrom becoming marked.

STALE BREAD.

The cells of the walls of dough are made up of starch and gluten with traces of dextrine, glucose and sugar. Also there is vegetable albumen soluble in water and united with the starch and gluten. In baking the albumen is coagulated, the gluten is dehydrated, the starch grains are swollen, stiffened, and many of them burst, glassed and dried into what is called glacial starch. Another effect is to make the glassy starch so incorporated with the gluten as to become inseparable by washing after baking.

On drying the dehydrated gluten immediately absorbs the water from the starch with which it is mixed or incorporated, as roasted alum absorbs water that is sprinkled upon it. The starch thus rendered dry and stiff gives a greater rigidity to the walls of the sponge and makes its texture more firm and true and thus we have stale bread.

Professor Horsford in his admirable report to the U. S. Government on Vienna bread at the Vienna Exposition of 1873, published at Washington, Government Printing Office, 1875, page 96, art. 212, says: "The solution then of the question of the difference between stale bread and bread freshened by heating or toasting is this: The gluten of the crumb walls of the stale bread which are stiff and brittle, is dehydrated by the heat in freshening, and the water of hydration driven out softens the glacial horny starch which coats and penetrates the gluten. Thus softened the crumb is more palatable, because it is in the condition to be dissolved in the

saliva and tasted. On cooling the water is withdrawn from the starch which is thereby rendered stiff and restored to gluten and the bread becomes stale."

CRUST OF BREAD.

Loco citato, page 93, art. 204. "The examination of the crust shows that heat has produced a variety of effects of marked character. It has been converted into dextrine. Portions of the dextrine, as well as of the gluten, have been subjected to slight destructive distillation, yielding at the outset, with proper temperature, an agreeable, essential oil, the grateful aroma of freshly baked rolls. If continued too long, the destructive distillation produced causes the formation of substances less grateful to the sense of smell, bitter to the taste, and worthless for purposes of nutrition. Among the bodies produced, Reichenbach recognizes "Assamer," a bitter substance, the effects of which on the human organism according to Von Bibra are akin to those of coffee."

Crust coffee then is not a bad substitute for ordinary coffee as it contains *assamar*, indeed it is sometimes a very good substitute for those who cannot bear coffee.

THE SIZE OF LOAF.

It is best not to have it too large so that it can be thoroughly cooked without being burned on the outside. But the invention of the closed steam baking pan avoids this difficulty as the steam prevents the burning, so much so, that it is usual for the cook to open windows in the pan to admit air so that the loaf can be properly browned.

Photographs which I have had taken of leavened and unleavened bread

show much less difference between them than one would expect. The vesiculations of the leavened bread are larger to be sure, but they are no more numerous than the vesiculations in the bread made by merely mixing water with flour into a dough and baking it.

THE LATE EPIDEMIC OF YELLOW FEVER IN FLORIDA.*

An investigation into the origin of the epidemic is not only interesting but necessary to enable us to arrive at a conclusion. Mention was made in the report for last year (see report, 1887, p. 13) of the extension of the disease from Key West to Tampa. It appears from reports on record in this office that the disease was brought to Key West in the effects of a person by the name of Bolio. The Bolio family were hotel keepers in Havana. They had kept a hotel in two or three different houses, in each of which persons had died of yellow fever, as certified by Sanitary Inspector Burgess. The last house kept by them in Havana was the Hotel Quinta Avenida (or "Fifth Avenue" Hotel). When this family removed to Key West they took bedding, pillows, mattresses, and different articles of furniture, but they did not take them at one trip, nor did they take them by regular line of steamers. The articles appear to have been shipped by the steamer *T. J. Cochran*, plying between Key West and Havana. The family went to and fro and brought back much household stuff as baggage. Key West at the time had no quarantine. The epidemic practically ceased at Key West before its recognition at

* Extracts from The Annual Report of the Supervising Surgeon-General of the U. S. Marine Hospital Service for 1888.

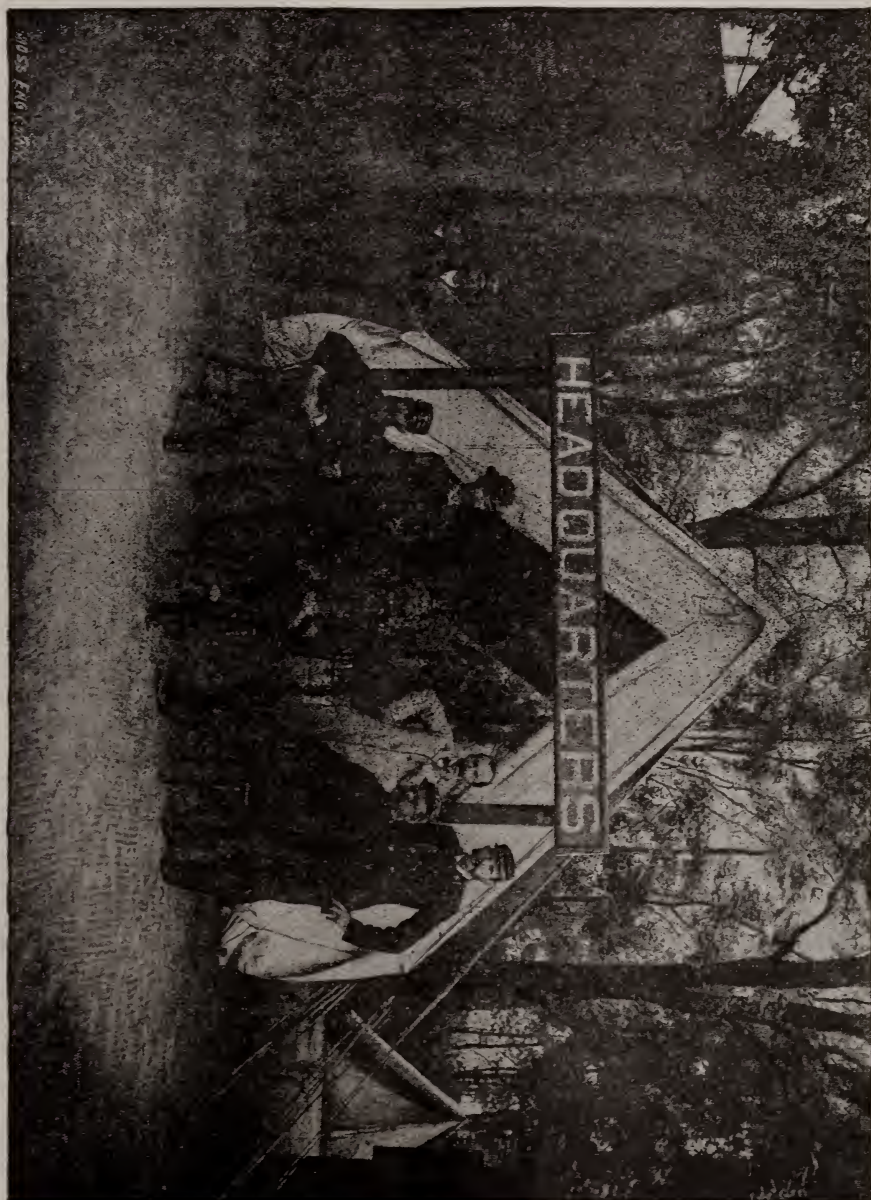


FIG. 106

DR. POSEY. DR. FACET. HOSPITAL STEWAR, MACDOWELL.
PASSED ASSISTANT SURGEON GUTIERAS. SURGEON HUTTON. ASSISTANT SURGEON GEDDINGS.

Tampa, and it appears that the first case was a person by the name of C. M. Turk, a fruit dealer. It should be remembered that when the fever broke out at Key West the Hillsborough county board of health immediately quarantined against that port, that the Plant steam-ships transferred their freight by a lighter to the wharf at Key West, and during the epidemic at Tampa they laid six miles from the town, out in the bay. No communication was allowed between the crew of the ship and the town of Tampa, nor any person allowed to land except passengers coming through Tampa with proper health certificates. The steam-ship line established a hospital at the quarantine station at Ballast Point, in Tampa Bay, so as to be prepared for the appearance of occasional cases of fever, but there was but one suspicious case during the whole season, and that proved to be not yellow fever.

There was no regular quarantine at Tampa at this time, but the Hillsborough county board of health organized an inspection service, by direction of the president, Dr. John P. Wall. It appears that, so far as the introduction of the yellow fever into Tampa is concerned, the evidence shows that Charles M. Turk went in a boat to Key West by way of Punta Gorda, and, on his return from the infected port, was taken sick and died; that an Italian, Peep (or Pete), was taken sick at Ybor City. There is evidence to the fact that Turk and his clerk Pete were engaged in smuggling fruit into Tampa, as the steamer line would not bring such articles either from Havana or Key West; that the city of Tampa at the time was in an extremely bad sanitary condition, and that when fruit

and infected articles were smuggled into the city the germs of the disease found ready lodgment and propagated the fever.

The fever soon extended from Tampa to Plant City and Manatee. It is not known at present how it reached Jacksonville. The statement at first made public that a man by the name of McCormick took the fever is incorrect, as I have been informed by Dr. George J. Potts, of Jacksonville, that he treated cases of yellow fever on Bay street as early as the 8th of June, and there is more than a suspicion that the fever prevailing in Jacksonville in February last was yellow fever.* Passed Assistant Surgeon John Guit  ras, of this service, whose ability as an expert in the disease is well known, stated to me that he was sure that two of the cases reported by Dr. Daniel to the Florida Medical Association of this "mysterious" "society" fever were undoubted cases of yellow fever. It is probable that Fernandina, Gainesville, and Enterprise obtained their yellow fever by fomites from Jacksonville, and that the cases at Decatur, Ala., were due to the same cause. A refugee from Jacksonville, who left there before quarantine was made absolute as against Jacksonville, arrived in Decatur about the 21st of August,† and lodged at the house of a Mr. Spencer. He at first denied to the authorities that he was from Jacksonville, but Jacksonville papers were found on him of a recent date, and he was directed to leave the city, but Mr. Spencer, at whose house he was lodged,

* It is now believed that a man by the name of Lane had the fever in Tampa in October, 1887, and he came directly to Jacksonville. He was employed at Campbell's music store.

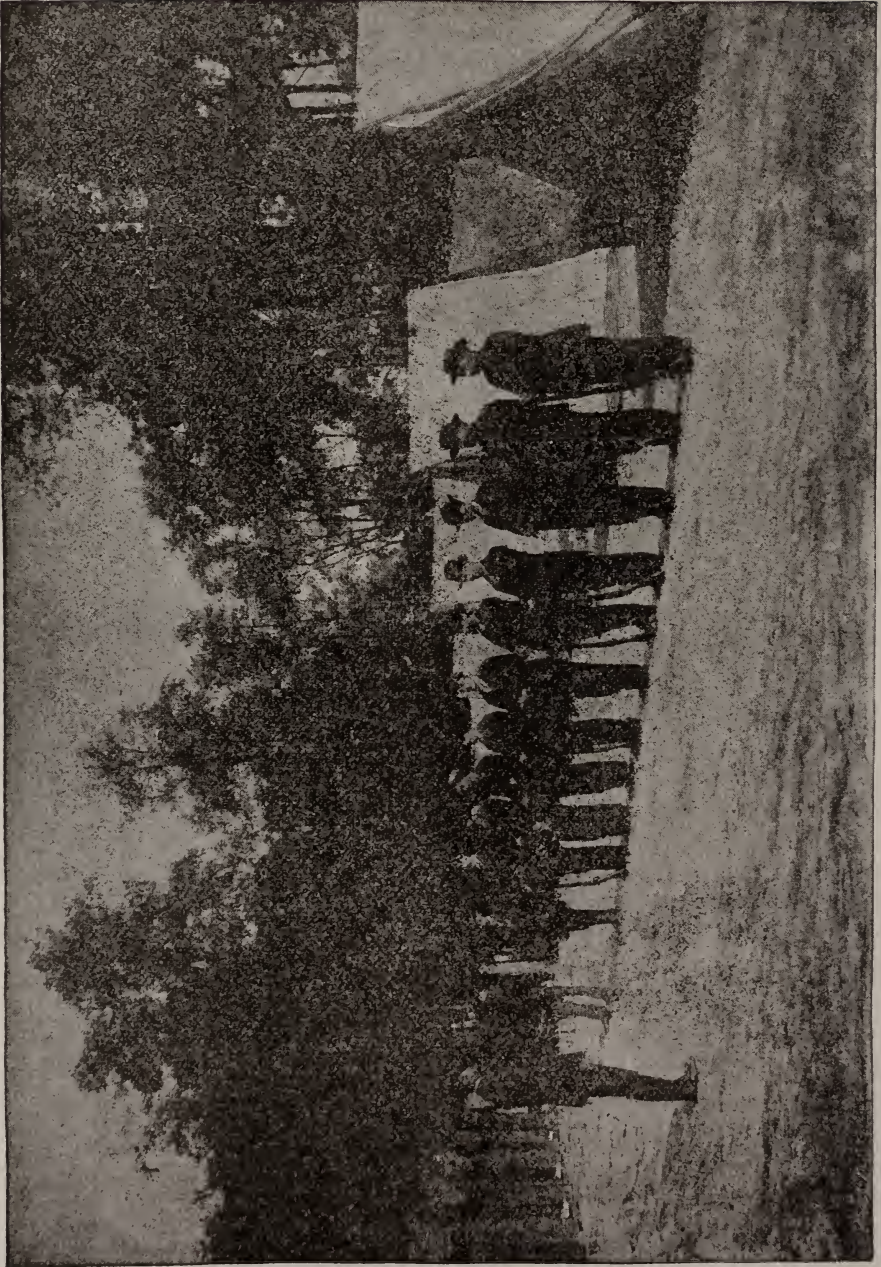
† At this time the Jacksonville authorities claimed that all cases were properly guarded and the city was not generally infected.

was shortly afterward taken with the fever and soon died.

One of the principal sources of obstruction to the measures taken to prevent the spread of epidemics has been the lack of uniformity in the health regulations throughout Florida. Proper concert with the State health officers would have enabled the Government measures to have been taken more promptly and more efficiently, as in nearly every instance the Government has been obliged to wait until the disease had so far progressed as to make it a matter of great difficulty to arrest its spread, and in some cases it has been found impossible. When the disease broke out in Tampa, and was so reported, the Governor of the State, October 14, 1887, requested aid (the fever having been in existence in Tampa, as already stated, since September), to the Hillsboro county board of health, of which Dr. John P. Wall was president. This board was authorized by this Bureau to procure disinfectants and such sanitary supplies as were necessary for the disinfection and fumigation of houses, and guards for the isolation of the sick. The disease continued, and Assistant Surgeon J. Y. Porter, U. S. Army, having volunteered his services, was placed in charge of a temporary hospital building which was established in Tampa, on the military reservation, a high and healthy location, and acclimated nurses were employed. Dr. Porter there remained until the alleged cessation of the epidemic. His services were deeply appreciated by the board of health and the people of Tampa. Dr. Porter, on November 11, reported that yellow fever had appeared in Manatee. The air was quite cold by November 23, and was reduced to a freezing temperature.

The nurses from Savannah and Key West were discharged, and the hospital was closed. On the 29th of November the Florida Protective Association raised the commercial quarantine against Tampa. The hospital was finally closed on the 5th of December, 1887. On the 13th of January Dr. Wall reported that rumors of the presence of yellow fever at Tampa were without foundation. In the meantime active disinfection and fumigation of the houses had been going on. Under date of January 16, Dr. King Wyly, president of the Florida Health Protective Association, stated that no yellow fever then existed in the State. Late in February I was informed that there were rumors of yellow fever in Plant City and Tampa, and some other places, and that the germs had probably remained through the winter undisturbed. Surgeon Murray, of this service, who was then about to change stations from Ship Island, was directed to proceed quietly along the west coast of Florida and inspect the towns therein. The result of his inspection, which was received in March, was sent to the governor of Florida, and Dr. Murray, as appears from his letter of March 17, made every effort to arouse the local authorities to a sense of the danger; and it should be remembered that at this time the Government had no authority to interfere in the State, as the governor had not requested it. Owing to the absence of a State health officer nothing was done except under the direction of the county boards of health.

On the 16th of July the presence of yellow fever in Tampa was again admitted, and on the 19th the governor of Florida made application for aid to the local authorities in suppressing the



CAMP PERRY.

disease, and a house inspection of Tampa, Plant City, and Manatee was immediately commenced. Surgeon Murray, of this service, was detailed to take charge of matters at Manatee, and instructions were given Dr. Wall to perform thorough disinfection of dwellings and infected things in Tampa and Plant City. The inspection was completed on the 27th of July. The village of Manatee then contained about one hundred unacclimated persons. In August the fever was reported at Jacksonville, Fla. Passed Assistant Surgeon Guitéras was directed to proceed to that port and report the facts. He found a patient by the name of McCormick with yellow fever in the Sand Hills Hospital, and the next day two more cases of yellow fever were reported. Two days later Passed Assistant Surgeon Guitéras was directed to open an inspection station at Way Cross, Ga., and as soon as possible additional inspection stations were directed to be opened at Dupont, Ga., River Junction, Fla., and the order was given that all baggage passing through those stations from places in Florida should be fumigated before being allowed to come further north or west.

At the same time a sanitary inspection of other towns in Florida was ordered, and as soon as it was definitely ascertained that the western portion of Florida was free from fever the inspection station was moved from Du Pont to Live Oak, and the one at River Junction removed. The one at Way Cross was placed in command of Surgeon Hutton and greatly enlarged by the construction of a large warehouse suitably fitted for sulphurous acid fumigation.

The following circular was issued under date of August 28 :

CIRCULAR.

Regulations for the prevention of the spread of yellow fever from certain infected places in the State of Florida.

TREASURY DEPARTMENT,
OFFICE SUPERVISING SURGEON-GENERAL,
U. S. MARINE-HOSPITAL SERVICE,
Washington, D. C., August 28, 1888.

In accordance with the act of April 29, 1878, and appropriation acts authorizing the maintenance of quarantine at points of danger, the following regulations are framed to assist in the work of preventing the spread of yellow fever, now prevailing as an epidemic in certain towns in the State of Florida :

1. A camp of refuge for persons from infected places in Florida is hereby established, to be under command of Passed Assistant Surgeon Guitéras, on the south bank of the St. Mary's River, near the crossing of the Savannah, Florida and Western Railroad, to be known as camp Perry. Temporary quarantine stations are hereby established, under direction of Surgeon Hutton, Marine-Hospital Service, near Way Cross, Ga., and Live Oak, Fla. Those at Du Pont, Ga., and Chattahoochee River Junction are hereby discontinued.

2. At the stations aforesaid an inspection will be made of all persons, baggage, mail, and express arriving by rail from points south ; and in case of arrival of any person, mail, baggage, or express matter capable of conveying infection, coming from an infected place or a place not known to be healthy, as shown by recent inspection reports, then such person shall either be returned to the original place of embarkation or to Camp Perry, at his or her option, and the baggage of such person shall be held for fumigation, and fumigated under the direction of the officer in charge. Mail matter from infected places will be fumigated under the direction of the Railway Mail Service, under orders already issued by that service.

3. All persons arriving in Camp Perry will be under the orders of the commanding officer, and will not depart the camp without permission, until ten days shall have elapsed from the date of their departure from that

infected place. A special daily train will run between Jacksonville and Camp Perry, for the purpose of conveying persons from Jacksonville and such other business as may be incident thereto, and at the expiration of the detention period such persons will be taken to Way Cross, and then allowed to proceed to their destination without further detention.

4. Railway agents, conductors, or other persons in charge of railway trains south of and including those of the Savannah, Florida and Western Railroad will not receive persons from infected places on board trains, except to the refuge camp as provided in paragraph 1 of this circular, and sleeping-cars will not be allowed to proceed south of Way Cross, Ga., until the cessation of the epidemic.

5. An additional refuge camp, under the same regulations as those governing Camp Perry, will be established in the mountains of North Carolina (the site hereafter to be determined) as soon as practicable.

JOHN B. HAMILTON,
Supervising Surgeon-General.

Approved:

C. S. FAIRCHILD,
Secretary of the Treasury.

The board of health of Duval County was aided by the authorization of the erection of certain cheap barrack huts, which were to be built near Jacksonville for negroes liable to propagate the fever, and it was provided that special excursion trains should run at intervals under guard to some point in the Tennessee, Georgia, or North Carolina mountains, whenever a sufficient number indicated their desire to go. Such persons on arrival at their destination were to be released under parole not to go to the seaboard or quarantine towns within ten days from the date of their departure from Jacksonville. The board of health of North Carolina was consulted prior to the allowing of any refugee train to leave, and the board of health of Tennessee had issued a

circular under date of August 17 which permitted refugees to go to the elevated plateaus and mountainous regions of Tennessee, or pass directly through the State. Many towns in Tennessee and North Carolina applied for the running of special trains to them, and asked for the sending of the refugees. On receiving a notification from the secretary of the North Carolina board of health at Wilmington, Dr. Thomas F. Wood, that Hendersonville and other towns in North Carolina were anxious to receive refugees, a special train was provided at the expense of the Government to run to Hendersonville.*

The following is the report of Passed Assistant Surgeon Guit  ras, who was detailed from Camp Perry to accompany this special train:

CAMP PERRY, FLA., *Sept. 16, 1888.*

SIR: I have the honor to report as follows concerning the excursion train of refugees from Jacksonville and Camp Perry to Hendersonville, N. C.:

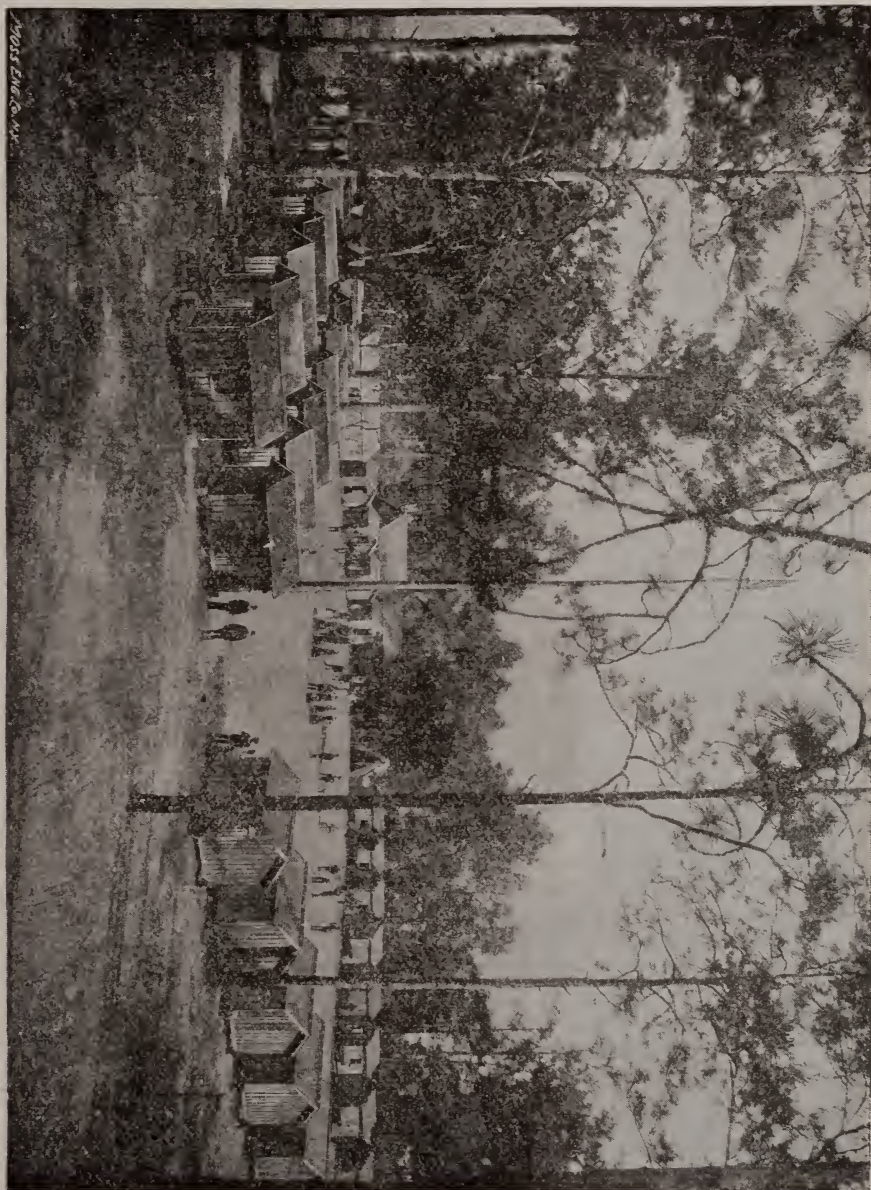
The train left Jacksonville on the morning of the 11th instant, and was joined by myself and the Camp Perry contingent at Folkston, Ga., making, in all, a total of 291 souls.

It was found that no keys had been furnished to lock the cars, and this evil it was found impossible to correct by applying to the railroad authorities, on account of the variety of cars furnished.

Unfortunately the trip was prolonged beyond the time anticipated, on account of several accidents on the road. These perhaps might have been provided for with greater promptitude by the railroad authorities had they fully recognized the gravity of the situation.

The evils resulting from this delay were twofold. First, the running short of rations. This was provided for to a great extent, sometimes by the generosity and in others

* It has been claimed that the sending of this train violated the Augusta conference, but Hendersonville was not considered as a "populous city," as mentioned in that conference.



CAMP PERRY.

by the cupidity of the towns along the road. Some parties at Atlanta and Macon generously furnished relishes, while others charged exorbitant prices. I must mention, however, the most conspicuous example of generosity. This was shown by the town of Easley, S. C., which provided, without any charges, and late in the night, the most abundant assortment of supplies.

The second and most important consequence of delay was the development of cases of yellow fever on the train. Only two cases developed in the first twenty-four hours and three in the course of the second day. Of course it was to be expected that this would happen in an aggregation of people leaving Jacksonville; but it is very probable that the accumulation of people, clothes, and baggage for so long a time in hot cars, which could not be kept in a sanitary condition, created a secondary center of infection that will show itself in the development of cases after the arrival in Hendersonville.

The appearance of yellow fever among the refugees had a very unfavorable effect upon the *morale* of the party. They were truly panic stricken. One car quarantined strictly against the other, and efforts to escape were frequently made, and, unfortunately, in a few instances, with success.

One lady was taken with labor pains in the train, and, with the consent of a local physician, she was allowed to remain at White Sulphur Springs, near Gainesville, Ga.

A marked contrast was apparent between the two cars occupied by the refugees from Camp Perry and the rest of the train. Among the former no cases of yellow fever occurred, and the *morale* was excellent. The two cars were strictly quarantined against the rest. No complaint was heard, no fear expressed. In the other cars the spectacle was pitiful. The isolation of the sick in one car I discovered would have increased the excitement by bringing together and crowding still more people from the different cars who were suspicious of each other.

Great credit is due to that portion of the refugees who gave me their support throughout the journey. It was owing to their kind firmness that we had no decided breach of discipline.

We arrived at Hendersonville on the 13th, at 2 o'clock a. m. The hospitality of that

generous people became at once apparent. They had been up all night preparing a building for the reception of the sick. Fires were built around the station, adding warmth and cheerfulness to the cordiality of the reception. With the assistance of Dr. Few, of Hendersonville, the patients were removed to the hospital. The refugees found accommodation at very reasonable rates.

On the morning of the arrival a sixth case of yellow fever developed. The comparatively large proportion of cases has caused much excitement, and it is probable that some of the refugees will break their parole.

It is apparent from the above facts that the experiment of excursions insisted upon by the people of Jacksonville is not a success. There is, of course, a possibility that Hendersonville may become a centre of infection, but I do not expect this to happen. The large proportion of cases taken sick during the journey renders the measure one of questionable advantage to the people of Jacksonville, let alone the hardships of the journey.

The removal of a large portion of an infected population to high altitudes, where yellow fever spreads with difficulty, is a desirable object, and appears perfectly practicable if the health department of the nation was endowed with the same liberality as the Army and Navy. Such action would necessitate the existence of extensive permanent quarters in the mountainous regions, with a standing garrison of acclimated people; the fitting out of special trains exclusively under the control of the Government, and constructed specially for that purpose. These encampments and depots of sanitary stores should be ever ready for action, in the same manner that the strategic points are maintained in readiness at great expense by military authorities. Provision should be made also for the constant training of a standing sanitary corps, by setting the machinery in motion during seasons when there are no epidemics, as is done in military and naval reviews and exercises.

I have the honor to submit the above report for your consideration.

Very respectfully, your obedient servant,

JOHN GUITÉRAS,

Passed Assistant Surgeon, M. H. S.

It subsequently appeared that some

of these persons violated their parole and were found in various sea-board cities, and no further trains were sent, notwithstanding other towns in North Carolina asked for the sending of the refugees. At Hendersonville some cases of fever appeared among the refugees, but none among the citizens. On the 28th of September the Bureau was notified by the secretary of the North Carolina Board of Health that they had given their opinion to the governor that no more refugees from the yellow fever district should be received into the State of North Carolina unless placed in sanitary camps under guard.

The establishment of Camp Perry has proved entirely successful. This camp was first temporarily in charge of Passed Assistant Guit  ras, but afterwards placed under command of Surgeon Hutton. The camp was open to refugees before it was fairly completed, and there was much complaint in consequence of the insufficient character of the accommodations. These complaints were intensified by the apparent desire of the Jacksonville people to break down the quarantine regulations, and public sentiment seemed to be forming in the same direction. I therefore issued the following card, which was widely published. Its effect was immediate and the tone of popular sentiment seemed to be changed :

To the public :

Certain criticism, mainly based on misinformation, concerning the present sanitary regulations have appeared in the daily press ; and as these criticisms have a tendency to weaken the hands of the officers engaged in the prevention of the spread of yellow fever and to induce laxity in the maintenance of quarantine, and thereby greatly increase the danger to the whole country, I have thought

it expedient to make a general statement of the condition of affairs.

The United States Government, acting through its Marine-Hospital Service, is engaged in helping the people of Florida, not in injuring them, and in particular the stricken city of Jacksonville has been treated with a kindly consideration suited to the calamity which has befallen it. They were permitted to go anywhere they desired so long as the disease was confined to circumscribed areas in the city ; but when the city became generally infected, then the necessity of placing certain restrictions upon the movements of outgoing persons was apparent, and in restricting promiscuous travel from Jacksonville the Bureau is looking to the security of the country. The dreadful record of the ravages of yellow fever in the towns along the railroad lines leading out of New Orleans in 1878, where there were over 13,000 persons affected with yellow fever, of whom nearly 7,000 died, is too fresh in memory to risk its repetition along the Atlantic sea-board. The extension of the disease to Memphis in 1878, where nearly 3,000 persons died of the yellow fever, might have been prevented had there been any authority to restrict travel by proper quarantine. It may be a fearful alternative to compel persons from Jacksonville to remain within a camp of refuge for a period of ten days before being allowed to go at will, but that alternative is humane in comparison with the results which would follow the admission of the infection into all the sea-port and southern cities, each of which, in a short time, would itself become a new center of infection.

The Government has not at any time established a strict cordon sanitaire about the city of Jacksonville, but has opened a camp of refuge in a high, healthy locality, and furnishes free rations to those detained. It has authorized, at a large expense, the building of two hundred pine cabins to shelter those poor people who are driven out of infected localities, and it is willing to provide for the further relief of Jacksonville by furnishing transportation by special excursion trains to any definite point that is safe and had opened its doors ; but there are few places willing to receive large numbers of refugees. While it is probably true that the body of a healthy person does not carry the contagion, his clothes do carry it, and bag-

gage packed in an infected house is dangerous in the extreme. Fumigation stations have been established at proper points, and all baggage will be fumigated which comes from the infected city. I do not think, therefore, there can be any reasonable ground of complaint.

But the complaints from Jacksonville were so numerous that there was danger of crippling the usefulness of the camp, and in obedience to the President's direction I proceeded to Camp Perry in order to reassure refugees and to give personal attention to the work of completing the camp. The huts previously contracted for arrived at the camp the day before my arrival and were soon placed in position, and the camp speedily put in good order; strict military discipline was maintained, and the guests of the Government provided with every comfort practicable.

The accompanying illustration gives the appearance of the camp better than a verbal description.

On my leaving the camp, complimentary resolutions were passed by the refugees, to which I replied in substance as follows.

This is given as part of the history of the time:

I am deeply touched by your sympathy and kindness. I am all the more sensible of this because of the unjust criticism directed against me in my official capacity and the attacks upon my private character. These commenced when I announced the presence of yellow fever in Florida last spring. As a matter of fact, the presence of fever in this State was reported by me to the Governor nearly or quite two weeks before I made any public announcement of it. That the statement was true, the fact of the establishment of this camp, and that we are here to-day in this pine wood, too well attests. But that is all past now, and let it be forgotten and forgiven.

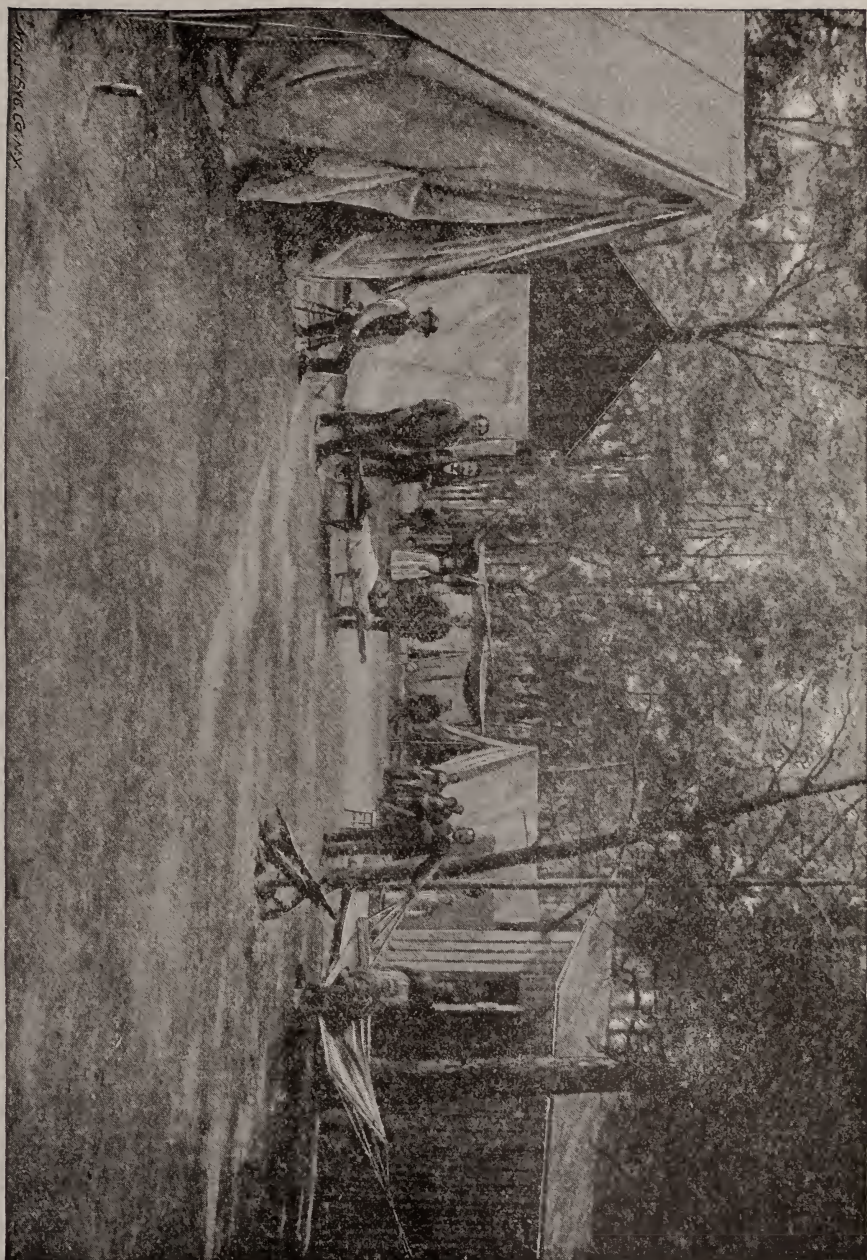
When I came here and hoisted our dear old flag over this camp, I, as the Government representative, felt that I wanted every man, woman, and child coming here to know that they were no longer poor, panic-stricken, fever-hunted refugees, but welcome guests of our common country. The warm, ruddy stripes of the banner which floats above us are emblematic of our country's love for its children, and each star in that azure field represents a State, every one of which must be protected when in distress, and suffered for, if need be. These sentiments I know actuate the officers of the service whom I leave in charge here.

I thank you, ladies and gentlemen, for your courtesy, and in saying farewell I assure you that you have made it a difficult word to speak.

It is proper to state that but two deaths have occurred in the fever hospital attached to the camp. The officers charged with this duty deserve especial mention here for the efficient manner in which they performed their delicate duty. Surgeon W. H. H. Hutton; Passed Assistant Surgeon John Guit  ras; Assistant Surgeon H. D. Geddings, and Dr. C. Fag  t, of New Orleans, all at Camp Perry; Passed Assistant Surgeon F. M. Urquhart, Way Cross and Live Oak inspection stations; Assistant Surgeon William Martin, U. S. Navy,* Dr. J. L. Posey, of New Orleans, Dr. J. F. Hartigan, of Washington, as sanitary inspectors; Assistant Surgeon G. M. Magruder, M. H. S., in charge of the inspection station at Way Cross, Ga.

At Jacksonville, Dr. Joseph Y. Porter, of the Army, having volunteered his services, was placed in charge of the Government relief measures at that place. At Fernandina Surgeon J. W. Ross, of the Navy, was given charge of Government relief measures at that place. These officers also deserve the

* This efficient officer has lately taken charge of the Government relief measures at Gainesville.



YELLOW FEVER CAMP, ONE-HALF MILE FROM CAMP PERRY

special thanks of the Bureau, but Dr. Porter's duties have been especially trying at Jacksonville.

The Government was not called on to render special aid to the Duval county board of health and Jacksonville until their resources were practically exhausted and general appeals were made to the country for aid. The Bureau assumed charge of the municipal hospitals at Sand Hills and Saint Luke's and retained the officers and employes previously employed by the board of health, paid for the sanitary police, and purchased disinfectants and general sanitary supplies. The expenses at Jacksonville have been quite heavy. A fumigation station was also opened at Jacksonville and placed in charge of Dr. Julius Wise of Memphis. Dr. Porter remains in Jacksonville at the date of this report in charge of the hospital and all Government relief measures in that city. At present, in consequence of the following request of the board of health of Jacksonville, refugees are prevented from returning to the city.

JACKSONVILLE, FLA., *October 19, 1888.*

Whereas, the board of health recognizes as one of the gravest responsibilities which rests upon it at this time the urgency of protecting, in so far as ability will permit, those at a distance who are unacclimated, whether citizens of Jacksonville or others, from unwarrantably risking their lives by coming into this city or its suburbs before there are reasonable grounds for believing that the danger of infection has passed.

Even thus early a disposition on the part of some of the absentees to return is manifesting itself, and as the fall advances and more confirmed weather occurs in the latitudes north of us, doubtless the pressure of business obligations or the longing for home, will constantly increase the number of those who will endeavor to deceive themselves in this regard.

The list of fever cases is being largely di-

minished and we have reason to hope that ere long the epidemic, in so far at least as the city proper is concerned, will be virtually at an end; but this will only be because the material for its further continuance will have been exhausted. The disease is now principally active in the suburban districts, even four or five miles from the city center, and new cases are likely to continue developing in these directions. Neither the houses or atmosphere of Jacksonville are any less dangerous to the unacclimated than they were a month since, and we would earnestly warn all who are liable to contract yellow fever against coming here merely because they may see that there are no cases reported. Wait until the board of health notifies you that the epidemic is not only over, but that it is reasonably safe for absentees and strangers to come here again, and then return only under such directions as may be advised by the authorities. We would add that there does not appear to be any probable grounds upon which to base an expectation that this time, so earnestly desired by us all, will come earlier than the very last of November or the beginning of December.

In consideration of the great importance of this matter as it bears upon the preservation of the lives of our absent fellow-citizens, and likewise of an early and thorough re-establishment of Jacksonville's ordinary healthful reputation, this board respectfully suggests to the city authorities the enactment of such an ordinance as will most effectually aid in protecting the interests of all concerned in this direction: Therefore, be it

Resolved, That until such time as the proper authorities shall officially declare it safe to remove such restriction no person who can not present satisfactory evidence to the authorities that he or she has had the yellow fever shall be permitted to enter any locality in Duval County where fever infection now exists, nor where such infection may develop, between the present time and the occurrence of frost; and this board of health requests Dr. Joseph Y. Porter, representing the Marine Hospital service of the United States, and who has signified the willingness of the Department to assume the duty and expense, to adopt such measures in conjunction with the civil authorities as will best prevent the return of the people to

Jacksonville before it may be determined safe for this community as well as for the people returning.

There have been up to November 20, 1888, 4,643 cases of yellow fever in Jacksonville, and 403 deaths. The sanitary conditions of Jacksonville are not good. The sewers are inadequate to furnish drainage for the city, and the probabilities are that many infected articles in Jacksonville will escape disinfection. The city council has declined to enact a compulsory ordinance providing a penalty for persons concealing infected household effects, and the Bureau has not up to this time authorized payment for articles destroyed, except in cases of the poor.

A GROWING SCIENCE.*

"It seems to me," muses one of the characters in "*Robert Elsmere*," "that in my youth people talked about Ruskin; now they talk about drains." This strikes the keynote of public opinion as we find it at the present time. The man of to-day no longer gluts his appetite with superstitious ideas, destroying his taste for facts, but instead is met on every side with a vast array of statistics, which are more than convincing—which are startling; and he is told in the plainest possible terms, that if he would prolong his own life and preserve that of his children certain immutable laws of hygiene and sanitation must be observed.

No science has wrought so many changes or grown so rapidly during the past twenty years as that of sanitation, nor has any other been so constantly dinned into the mind of the people at large. Many of its laws

have been known for centuries, but it is only during recent years that they have been intelligently understood in their true meaning.

It were difficult to say exactly along what lines this progress has occurred, for like all great movements it is the resultant of many and varied causes.

The germ theory of disease, the supposition that minute organisms may enter the blood and produce sickness and death, at first set many to thinking, and, better still, has more recently set many great minds to *working*, and we know as a positive fact that there are micro-organisms invariably found in certain diseases which are peculiar to them, and which will produce them on reinoculation. To destroy these germs in the human body has not yet been found an easy task, but the fact that certain substances when brought in contact with them outside of the human body will destroy, or at any rate hinder their growth, has opened up a field of prevention, the limit of which has not yet been arrived at. Antiseptics—poison destroyers—for use in and out of the human system, are at a premium in the exchanges of science, and it were not too much to say that we are on the eve of the discovery of valuable specifics for some of our commoner epidemic diseases.

Taking advantage of the crude facts already ascertained we have been able to apply with gratifying success the more powerful antiseptic substances to prevent the recurrence of disease in certain infected localities.

Antisepsis is the scientific term for *cleanliness*—a word much better understood by the masses, who will aid their physicians in their humane endeavors only in so far as they comprehend their

*From the *New Orleans Med. and Surg. Jour.*

meaning. Hence the necessity for, and hence the valuable services performed by the health primer in our public schools—a book always interesting to the child, and, in an era of common sense, to be considered far more valuable than much that has hitherto been used to expand the youthful mind. Hence the necessity for such teaching in the university, and for a special chair in medical colleges; for though physicians should be natural sanitarians they should not be expected to become the tutors of their private patients, who will not care, as a rule, to send a second time for the only man who ever told them that their house was dirty and drinking-water impure.

Organization in health matters is the safe-guard of a community, and we find that this is brought about not so much by medical men who have preached ineffectually for so many years, but by merchants and business men generally, who now look to some other cause than Providence when they find that their pockets as well as their lives are threatened by the periodical visitation of some dreaded scourage. Health boards are being demanded and created for States and cities, and conferences are called to determine plans of concerted sanitation. No State in which disease may become epidemic can afford to face the civilized world and assert that she has no organized health authorities.

These authorities, it is true, often differ in their views as to what sanitation is, and how disease is to be prevented, but as there is an increased tendency in all to follow those methods of prevention laid down by close scientific investigators, such as by fumigation, disinfection, and, the greatest

of all, cleanliness, we may entertain the most sanguine hopes for the future of preventive medicine.

U. S. QUARANTINE SERVICE.*

The following is the statement of the condition of the U. S. Quarantine Service at the present time:

Quarantine Station, Delaware Breakwater, Lewes, Del.

A bill is pending in the Delaware Legislature conveying site to the United States. The site had been previously deeded to the War Department, but is said to have reverted to the State by reason of failure to comply with the provisions of the act. Hospital facilities, though limited, are already provided and a steam boarding vessel will be chartered for service at the opening of the quarantine season May 1. A regular inspection of vessels is maintained at this station.

A new steam-tug with disinfecting machinery is in course of construction. A new warehouse and other buildings are also contemplated but cannot be begun until after the Legislature of Delaware has passed the desired act ceding jurisdiction over the site.

Cape Charles Quarantine Station, Fisherman's Island, Virginia.

A decree of court has been finally obtained authorizing the sale by the heirs to the estate of Fisherman's Island. The decree has been referred to the Attorney-General by the Secretary of the Treasury, with a request to perfect the title and secure the property. A fumigating steamer and a boarding steamer will be furnished. The construction of wharf, hospital,

From The Weekly Abstract of Sanitary Reports.

buildings, and officers' quarters must await the purchase of site.

The quarantine is at present in active operation under the management of medical officers of the service, with limited facilities upon Fisherman's Island, now under rental, and with a steam boarding-vessel owned by the service.

*South Atlantic Quarantine Station,
Blackbeard Island, Sapelo Sound,
Georgia.*

Plans for boat-house, wharf, and store-house finished. Advertisement is being made for proposals to perform the work of construction.

A fumigating steamer will be furnished as soon as practicable, and until this is done the usual method of fumigating with sulphur will be employed. A temporary hospital and other buildings are being erected under the superintendence of the medical officer in charge.

*Key West Quarantine, Dry Tortugas,
Florida.*

The board appointed, under provision of the act of Congress, approved August 2, 1888, to select a site for the quarantine station at or near Key West, chose the following keys situated among the Dry Tortugas sixty miles from Key West, viz., Garden, Bird, and Loggerhead Keys.

The War Department has transferred the custody of these keys to the Treasury Department.

The lazaretto and the bacteriological laboratory for investigation of yellow fever will be upon Bird Key.

The warehouse, detention buildings, quarters, &c., will be upon Garden Key. Fort Jefferson, on Garden Key, will be utilized in the quarantine establishment.

A protest has been filed by the Light-House Department, to which answer has been made, and Loggerhead Key will be retained by the Light-House Board.

*Gulf Quarantine, Chandeleur Island,
Miss., (formerly at Ship Island.)*

The new buildings on Chandeleur Island have been completed, and the station was formally occupied March 17th, a transfer of all serviceable property having been made from Ship Island.

The captain of the revenue cutter Seward has been instructed to burn the abandoned yellow fever hospital on Ship Island, and all condemned property.

Plans for a fumigating vessel for this station have been approved, the contract awarded, and the vessel is in process of construction.

San Diego, Cal.

The War Department has declined to cede the site selected by the special board convened for that purpose.

There being no other available site at or near this station, the erection of buildings is at present impracticable. An inspection service, however, will be maintained during the quarantine season.

San Francisco, Cal.

The board appointed to select a site for a quarantine station in San Francisco Bay, recommended a tract of land, some ten acres in extent, in Hospital Cove, on Angel Island. The War Department has given jurisdiction over said portion of Angel Island, and detailed two officers to form, with an officer of the Marine Hospital Service, a board for determining the boundary line, which has been accomplished. The Supervising Architect of the

Treasury has begun plans for detention barracks, hospital buildings, and quarters. The hospital buildings will be similar to those erected on Chan-deleur Island, but, in addition, provision will be made for the detention of emigrants. Advertisement for proposals for construction of the entire work will be received within three or four weeks.

Port Townsend, Wash. Ter.

The site for a quarantine station, selected by the commission appointed for that purpose, is a piece of land with a frontage of three-fourths of a mile on Squim Bay, in the Straits of Fuca. The location being upon a military reservation, the transfer of authority to the Treasury Department is still pending, but in the meantime numerous protests on the part of citizens have been received declaring the location to be undesirable, and it will, therefore, be necessary to change it. Pending settlement regarding site, an inspection service will be maintained at this station.

Fumigating Steamers.

Messrs. Pusey & Jones, of Wilmington, Del., are under contract to complete three fumigating steamers for use at the several quarantine stations. Additional steamers are advertised for, to be constructed and used on the Pacific coast.

HOME SANITATION.*

Not only the skilled sanitarian, health officer, man of science, or medical man can become a practical sanitarian, but each head of a family and each individual can become a health officer, providing, in a measure, proper

sanitation for his immediate home and surroundings. The physical training and development of physical manhood of the Spartans did not depend more on laws and customs than on home influence and self-education. So today the healthfulness of the home and the consequent vigor of the family do not depend, or should not, more on the man of science and technical learning than on the care, education, habits, and the observance of the plain, simple rules of health of the individual whose observations every day cover his abode and realm of existence. No man is entitled to a home unless he can make that home happy and healthful. He has no right to be the means of bringing misery to others or to leave to posterity the legacy of ill-health or constitutional weakness. It is the duty of all to be healthy and so observe the laws of hygiene that he may contribute the full measure of his individual well-being to the public good. His indifference or neglect of health laws and the observance of the sanitation of his home is not only a crime against himself, but the infliction of a wrong on the public and a burden on posterity. In this country, with its plan of society and intercourse, no family is isolated. Whatever conditions may produce disease in one family are often responsible for sickness in others. Cases are recorded where disease has had its origin traced to very remote causes both as to time and place, and these causes have been found to be the result of neglect in the proper care of the home. The fact that such cases are not always found in the homes of the destitute and ignorant is evidence that in families of the well-to-do and cultured there is a want of the observance of the simplest sanitary precau-

* From *The Sanitary News*.

tions, which, we are constrained to believe, results more from neglect and indifference than from ignorance of the means to be employed.

A mistaken idea prevails that an epidemic must prevail before there is need for any sanitary precautions, when the truth is, such epidemics are always evidence that these precautions have been fatally neglected. Moreover, the greatest mortality does not result from epidemics, but from deaths constantly occurring in the course of such diseases as are admitted to be wholly preventable, and result most frequently from the unsanitary conditions of neglected homes, and, in the absence of inspection and preventive means, extend throughout communities. Such diseases as diphtheria, scarlet fever, typhoid, and others of this class, are constantly carrying off their victims, and, in the aggregate, far surpass the deaths in epidemics. These diseases, if they do not result directly from ill-kept homes, find a lodgment, and their virulence and extent is increased. To such a degree has sanitary knowledge been disseminated, and the facilities for gaining such knowledge are so ample, that it is not a utopian dream to suppose every individual a sanitarian and every home a sanitarium.

It is not so much the ignorance of health laws as it is the neglect of their observance that is responsible for the greater portions of ills that afflict humanity. The lesson to be taught is the proper use of the knowledge imparted. The State boards of health within the past few years have made great and rapid advances. Some of the States are so thoroughly organized that on the first appearance of infectious diseases notification is given, and

means for the prevention of their contagion are instantly employed.

THE YELLOW FEVER OUTLOOK FOR NEXT SUMMER.*

The unusually mild winter noted in all sections of the country, taken in connection with the fact that yellow fever still lingers in the tropics, is sufficient to cause a marked feeling of uneasiness among the sanitary authorities of the South and Southwest. Similar meteorological conditions were manifest prior to the outbreak of 1878, and there is reason to think that history may repeat itself. Yellow fever, even although of an imported type, with the death of a Lieutenant on board of the *Yantic* in New York harbor on the 14th of January, is enough to cause comment, if not alarm. Should the present balmy weather continue into spring, the month of June will most probably exhibit a yellow fever tendency in the Gulf States, especially in Florida.

Within the last ten years the railroads and steamboats have opened up large additional tracts of territory in the New South; numerous towns have sprung up, filled with unacclimated Northern mechanics, who are not suitable subjects for exposure to the low forms of paludal fevers which annually prevail in many districts south of Kentucky and Tennessee. Rapid transit means the swift spread of infectious and contagious diseases. It then behooves the various railroad and steamboat interests of the Southwest to settle on some fixed sanitary policy; there are millions of dollars of interests at stake, and it is penny wise and pound foolish to subject such

*From the Cincinnati *Lancet-Clinic*.

interests to a shot-gun quarantine policy ; yet this is what may naturally be expected every time an outbreak of yellow fever occurs in all States lying below the Appalachian Ridge. Self-preservation is the first law of nature, and railroad corporations, including sleeping car interests, should have learned by experience, dearly bought, that they will not be trusted by those people through whose territory they carry infected passengers so long as the inhabitants know that such work is not done under medical supervision.

If the interests of the corporation are to be protected with those of the individual, co-operation between railroad and steamboat companies and local sanitary boards will be necessary. The earlier this is done the present year the better. One case of yellow fever in New Orleans or Jacksonville, in June, means an epidemic at Memphis, Chattanooga and Birmingham in August.

It is folly to suppose that yellow fever will not spread north of the Ohio River. New York, Philadelphia, and Boston have been scourged in times past ; Louisville, Cincinnati, and Gallopis have had indigenous cases within the last ten years. It is only the fine sanitary work done by the New York City Health Department annually that keeps fever out of that port ; their work of isolation is more of a protection than the boasted quarantine work of their State authorities.

After New York, Chicago does the best sanitary work in the country, and Chicago watches yellow fever in Florida, although it is far enough north to be almost beyond the range of epidemic probabilities. As the Eastern States owe a debt of gratitude to the New York City's Health Department, so do

the Northwestern States owe the Chicago health authorities a bounty of praises, for were it not for their emigrant inspection, Iowa, Wisconsin, Minnesota, and other States would suffer from smallpox. There are able sanitarians in New Orleans, Memphis, Nashville, Atlanta and Savannah—men who have had executive experience in the management of past epidemics.

The country at large would save millions of dollars annually were it not subjected to the senseless excitements induced by yellow fever outbreaks. If we lived under a more paternal form of government, with a centralized power, much could be accomplished in the prevention of epidemics ; but the glorious old doctrine of State rights, more defiant than ever, prevails to an alarming extent, North and South. To meet the requirements of the case, the State Boards of Health must join forces and act in harmony, for the State Health Officer of Tennessee must not think differently from the State Health Officer of Louisiana in matters pertaining to the sanitary interstate regulation of the passenger and freight traffic of foreign corporations.

As we before remarked, "It is a warm winter." With Jacksonville still in sight and to the memory of many dear, yellow fever on the Yantic in New York harbor, with a death in the middle of January, the outlook for yellow fever next summer is good ; alarm is needless, but the warning is given to those most concerned for their best interests.

CONSTIPATION OF INFANTS.—Prof. Parvin recommends, as a simple expedient, rubbing the abdomen with a little sweet oil.

ART IN SICK-ROOMS.*

BY DR. B. W. RICHARDSON,
OF LONDON.

In these modern days we do not confine to their rooms people who are sick for the long periods common to an age of medicine which has now nearly passed away. But even at the present time we require to practice more artistic care. A sick-room should always be as agreeable to the eye of the patient as it can be made, and every effort should be carried out to prevent monotony. The furniture should be light, easily movable, and of a cheerful color; all dark hangings and sombre coverings, when there, should be replaced by white, or light blue, or gray-colored fabrics, and the walls should be of gray or light-green color.

Papers of flaring colors, and papers which have for a pattern a number of rings or circles of flowers of one design, are extremely bad. I remember an instance in which the paper of a wall had for its pattern a series of circles like so many sunflowers; that paper produced in a nervous patient a sense of giddiness which led to nausea, and had a very bad effect indeed. I thought at first that the complaint made against this paper by the patient was rather absurd, but when I tried for myself the experiment of looking for a few minutes at the rings of the pattern, I actually became, against my will, subject to giddiness also, and to a sense of nausea which was most unpleasant. The fact led me at once to tear up a prescription I had written as a sedative for stomachic disturbance, and to order instead a screen which

should shut off the sight of the objectionable wall, and which proved, in fact, an effective remedy.

I remember another instance in which the walls of the room were covered with a pattern of a "fleur-de-lis," the shading of which, by some curious twistings, caused each flower to resemble a death's head. The patient in the night detected this singular extravagance of art, half asleep and half awake, fancied himself in a sort of crypt of skulls, which caused him a sleeplessness that lasted until the morning, and led to a bad day. The walls of a sick-room should be quite plain, and of gray or light green color, but there is no objection to cheerful pictures if they are now and then changed in position, and are pleasant to the mind of the invalid without becoming wearisome. Flowers in the sick-room are always good so long as they are bright and fresh, but they should be frequently changed, and it is sound practice to remove them during the night. Flowers which have a sickly odor, lilies, for example, should be excluded, however charming they may be to the eye. As a rule, living flowers are better than dead. Dried leaves, like pot-pourri, are bad for the sick room; they gather dust and the stale odor they emit impairs the purity of the air.

AMMONIA IN THE BATH.—Nothing so quickly restores tone to exhausted nerves and strength to a weary body, as a bath containing an ounce of aqua ammonia to each pail of water. It makes the flesh firm and smooth as marble, and renders the body pure and free from all odor.

*From the *Æsclepiad*.

NURSING INFANTS WITH ASSES' MILK.*

In recent years, in France, conscientious efforts have been made to ascertain the principal causes of the loss of population, and it has been demonstrated by numerous facts that one of these causes consists in the physical degeneration induced by deficiency of alimentation in infancy; and the most eminent physicians of Paris, and the Director of Public Assistance, have endeavored to modify and improve the system of nutrition in the public charitable institutions, providing for recently born children lactation adequate to the necessities of the temperament and constitution.

In the Hospital for Infants' Diseases, situated in Sabres Street, there exists a section for rickety boys and girls, whose miserable aspect produces an impression of pain upon the mind—unfortunate beings who have inherited the organic vices of their parents, and who suffer from anæmia's cruel tortures.

The administration of the hospital is arranged in two separated pavilions, where there is much ventilation, with large windows that look out upon a garden, and whose walls have double rows of willow cradles perfectly equipped. The newly born receive here the personal care of the establishment, beginning with being weighed in the balance the same day they make their appearance, the operation being frequently repeated almost every month in order to determine with exactness the development of the child. The little one is subjected to an especially nutritious diet of the most tonic kind, if it had been previously fed from a refractory goat liable to convey conta-

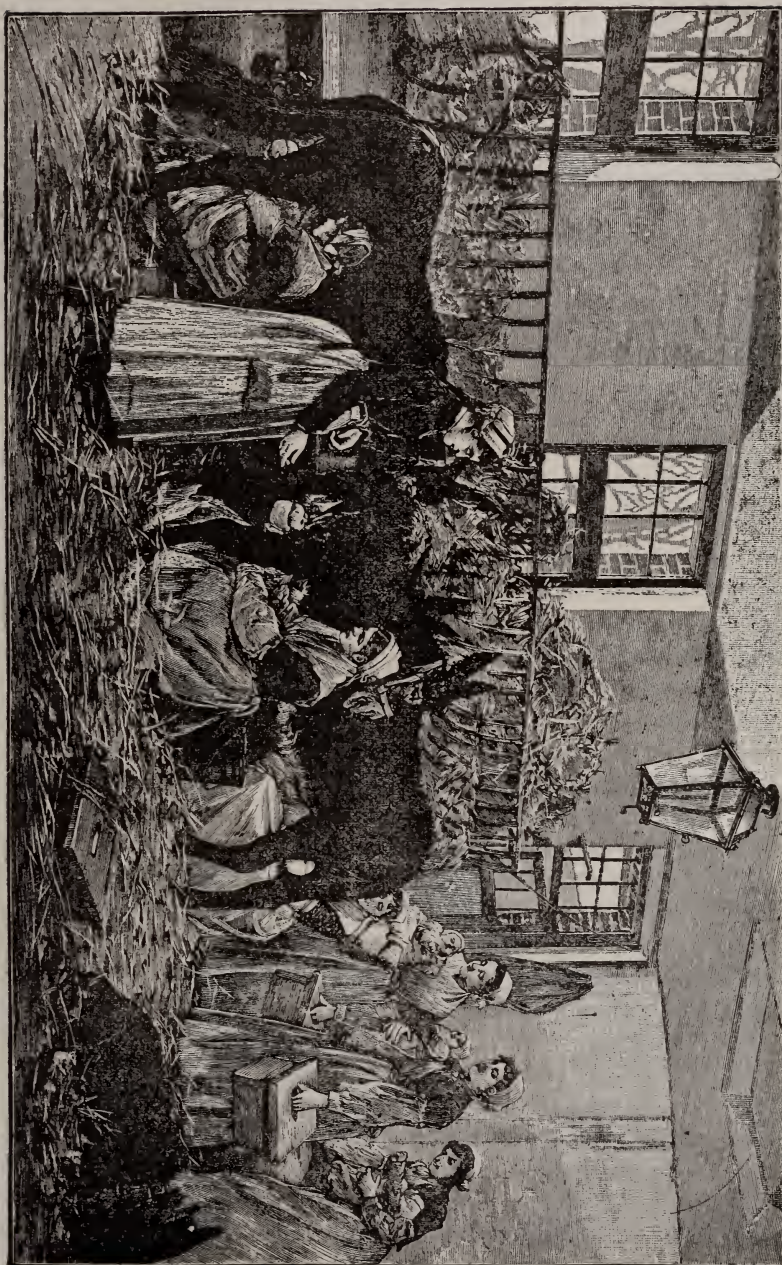
gious germs, it having been found by experiment that the milk of this animal, although possessing nutritive principles of the most salutary kind, presents the inconvenience of communicating by absorption the effects of those nervous accidents to which the goat is subject.

The public charities of Paris, advised by the wise doctors of medicine, have substituted for the milk of goats that of the ass, and have installed an ample yard near the pavilion of the rickety and scrofulous children, which is only separated by a short covered passage-way. Nothing is more picturesque than the spectacle of the lactation of the babes in this inclosure every morning, as graphically represented in our engraving, from a drawing by M. De Hænen.

The nurses, dressed in dark gowns with white caps and aprons, each carrying a child on the right arm and a little seat in the left hand, present themselves in exact turn to the women who have charge of the animals, and they hold the child, applying its lips to the teats of the docile animal. The children suck with avidity the liquid nutriment, which is fresh and of agreeable taste.

The Administration of Public Assistance of Paris has calculated that one young ass is able to lactate abundantly for a space of nine or ten months, and when this period has passed they are sold and replaced by others. It is well known that the milk of asses, by its vivifying qualities and its nutritious principles, assimilates in a great degree the milk of the nurse, and these disinherited and sick children, enjoying its beneficial effects by its permanent and methodical use, are restored little by little to health and vigor.

*From *The Sanitarian*.



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EDITORIAL.

SANITARY "CRANKS."

We are sorry to say that the State Legislature has adjourned without having given very much recognition to the suggestions for Sanitary legislation that were made to it by the State Board of Health.

The "*Sanitary Cranks*" must wait yet a little while longer before the full merit and importance of their work will be recognized. But, we are good waiters; "we will patiently bide our own time, knowing that as surely as the Sun rises and sets, as surely as the pendulum swings, as surely as motion is derived from steam, as surely as *gas-light* is now a recognized reality, and as surely as legislators do but reflect the sentiments of their constituents, just so surely will hygiene soon be looked upon as an essential and most important adjunct to political economy.

The pioneers of steam, of gas-lighting, of the telegraph, indeed of all the truly great and epoch-marking discoveries or departures of the world's history have been regarded as

"*cranks*," indeed, as a friend recently remarked it is the "cranks" that make the world move. He who follows the beaten track of those who have gone before, in an orderly quiet way, is an ordinary citizen; he who follows this track in such a way as to make himself conspicuous, is a distinguished citizen; but, he who deviates from the ancestral route, no matter how far humanity may ultimately benefit by this deviation, is a "crank."

For centuries piled upon centuries, man has been wont to maintain that disease was a "visitation of Divine Providence," subject to no law save that of the "Divine Will," and that this will was exercised arbitrarily, so to speak, causing disease to afflict mankind, because, according to religious teaching, mankind was a sinner. This view has been blindly accepted, in a mysterious, and but half-comprehended manner by those who think, while the great remainder of mankind have never even mentally asked the question as to the wherefore of disease. But now come forward some men who tell us that we have been wrong in our understanding of disease. They tell us that it is true that disease is a "visitation of Divine Providence" and that it really is meant as a punishment for sin; but they go further and tell us that "Divine Providence" has formulated a code of natural laws, just as our legislators have set up a code of human laws, and that when we break these laws of nature, we are sinning against nature, and that the punishment for our sins is that disease shall be visited upon us. They tell us that disease processes are subject to law, and they also tell us that they already are familiar with many of

these laws, and are daily gaining new knowledge in this direction.

They tell us that by a knowledge of and obedience to the laws of nature, disease can be avoided; they tell us that sickness is not the natural heritage of man, but an artificial condition brought about by disobedience to natural laws; they tell us that we have it in our power to avoid disease by proper sanitary police, just as we have the ability to preserve the peace of a community by a proper municipal police.

And after telling us all this, they, in turn, are told, by the majority that their talk is all "moonshine," that it is the vaporizing of theorists and they are classified as "cranks."

So rebuffed, they do just what all other "cranks" have done before them. They work and wait; they work that the masses may be educated up to the *practical* value of what have been called their theories, and they wait for the inevitable result of this education. They wait, because they know that in the history of the world all cranks have been obliged to wait; they wait patiently because like all their ancestral cranks they *know* the *truth* of what they say and they know that, in the end, truth must prevail.

We have not fallen behind, and, in this fact, there is ground for much congratulation and the confraternity of "Sanitary Cranks" can felicitate themselves that their brethren of the Keystone State have had their annual appropriation of \$5,000, increased to \$6,000; the increase is not so great as to be likely to tempt us into very great extravagance; we will hardly be likely to institute investigations that will result in telling us what is the cause of Diphtheria; but, we accept this in-

crease as an evidence of good-will in so much as since we were not cut down, we must perforce believe that we were not regarded as an utterly and absolutely useless branch of the State Government. We would, however, ask the people of this big State not to expect too much from a Board that has so little of the "*necessary*" with which to work. Until our appropriation becomes adequate, we must, of necessity, act principally as "consulting cranks," and in this capacity our advice and assistance is always cheerfully at the service of the people; when we receive sufficient money and power we will become "revolving cranks," and then the disease germs will have a hard time of it. When a Sanitary Crank "commences to really revolve it does so with a fatal and crushing precision that is very disastrous to the germs of disease. We therefore thank the legislature for what it has given us, we thank the Governor for his words of commendation in his message to the legislature and we will work and wait, trusting to hear, (two years hence) from the next legislature these comforting words "Well done, ye good and faithful "cranks," because ye have been faithful with but little encouragement, we will give ye plenty; enter into the joy of an adequate appropriation."

A PENNYWORTH OF MARRIAGE.—A little boy, a few days ago, came into a drug shop and asked for a "pennyworth of marriage." The attendant was puzzled, and named a number of things to the boy, but all to no purpose. The boy was sent back, and returned to say that he wanted a pennyworth of waddin' (cotton wool).

NOTES AND COMMENTS.

TOBACCO AGAIN.—It is said that ten out of twenty candidates for cadetship at West Point were recently rejected on account of tobacco heart brought on by cigarette smoking.—*People's Health Journal.*

AIR STARVATION.—Jean Paul Richter says on the day of judgment God will perhaps pardon you for starving your children when bread was so dear ; but if he should charge you with *stinting them in his free air*, what answer shall you make ?

CLEANING THE HANDS AFTER STAINING.—"If the hands get stained with magenta or other dye, which can not be washed off in the ordinary manner, they may be thoroughly cleaned by washing in hot water containing washing soda and a tablespoonful or two of lime.—*Cole's Studies.*

A GREAT FOOL.—A lady who went to consult Mr. Abernethy, began describing her complaint, which was what he much disliked. Among other things she said, "Whenever I lift my arm it pains me exceedingly." "Why, ma'am," answered Abernethy, "you are a great fool for doing so."

HORSEBACK RIDING AS AN ANTI-FAT.—Horseback exercise is resorted to more and more as an anti-fat regimen. There are a number of well-known men with a tendency to portliness and many business engagements, who go at night to riding schools and canter and trot around for an hour or two in the saddle, to shake up their livers and to get exercise to help keep down their weight.

ANXIOUS MOTHER.—"I wish, Susan, that when you give baby a bath you would be careful to ascertain whether the water is at the proper temperature." Susan.—"Oh, don't you worry about that, ma'am. I don't need no 'mometers. If the little one turns red the water is too hot ; if it turns blue it's too cold, and that's all there is about it!"—*Boston Commonwealth.*

HE "WENT ABROAD."—Dr. Swell :—You must take a trip abroad and remain away for a year.

Patient :—Thunderation, man ! I can't do that. It will cost too much.

Doctor :—Very well, you can stay at home, and I'll visit you every day and try to pull you through.

Patient (reflectively) :—Don't mention it, doctor. I hadn't thought of that. I guess I'll go abroad.—*Washington Critic.*

MUNICIPAL CONTROL OF DIPHTHERIA.—It has been shown, says Dr. Charles Storer, that by proper isolation and disinfection the cases of diphtheria in a community could be reduced to one-fifth of the ordinary number. There are the same reasons for placing the disease under official supervision as in the case of yellow fever, cholera, or small-pox. Twenty-three times as many patients die by diphtheria as by variola.

SIR EDWIN CHADWICK.—After more than sixty years of almost, if not quite, unexampled persistent labor for the public welfare, chiefly in the domain of sanitary science, and public health, Edwin Chadwick, still actively at work in the ninetieth year of his age, has been rewarded with the non-

hereditary title of K.C.B., the C.B. having been conferred upon him a number of years ago.

HOW MILLIONAIRES ARE MADE.—“Did you ever notice,” said one recently whose business requires him to be on the street constantly, “that it is chiefly the poor people who drop their money into the boxes or cups by the side of the street corner organ-grinders? The rich and well-to-do never think of giving to them. That is true, but who has the easiest mind, the happiest life and the greatest measure of contentment.

DIPHTHERIA VS. YELLOW FEVER.—During 1888, (says the *Sanitary Inspector*) about one-third of the cases of diphtheria which were reported in the city of Boston died. The number of deaths was 470. In last year’s yellow fever epidemic in Florida only 350 deaths occurred in about 4,000 cases. With diphtheria always with us, is it not about time to wake up to an appreciation of the fact that our northern scourge is worse than the southern one?

CLEANING WALLS.—A soft cloth tied over a broom is a good substitute for ostrich feathers, says *The Health Journal*. If this does not remove the smoke and grim that accumulate, take a loaf of stale bread, divide it into quarters, and, after moistening the cut surfaces very slightly, proceed to rub your paper very carefully, beginning always at the ceiling and moving your hand downward in straight lines. The results will be surprising.

A FIGHT, OF COURSE.—There are many comical stories about Irish wit-

nesses. Once in the hearing of an Irish case for assault and battery, counsel, on cross-examining one of the witnesses, asked him what they had at the first place at which they stopped. He answered, “Four glasses of ale.” “What next?” “Two glasses of wine.” “What next?” “One glass of brandy.” “What next?” “A glass of rum.” “What next?” “A fight, of course.”

L. T. FOR LADIES.—At a downtown restaurant with a big bar attached waiters may be seen daily coming to the bar with a cup and saucer and asking for an “L. T. straight.” The cups are handed back to them containing a fluid that very much resembles tea, but smells of something stronger. L. T. means ladies’ tipple, and it is simply an ingenious way of serving whisky straight at table to the many women who call for it without attracting the attention it would if brought in a glass.

DRUNKENNESS A CRIME.—The Minnesota legislature has enacted a law punishing drunkenness, for the first offense with a fine of not less than \$10 nor more than \$40, or imprisonment for not less than ten days nor more than forty days; for the second offense, a fine of not less than \$20 nor more than \$50, or imprisonment for not less than thirty days nor more than sixty; for the third and later offenses, imprisonment for not less than sixty nor more than ninety days.

LEAD FOIL.—Chocolates, confectionery, dried fruits, cheeses, and other food products are very often wrapped in what appears to be, and is described as tin foil, but it is really an

alloy, containing a good deal of lead. This dangerous practice is now prohibited in France, and the tin foil destined for wrapping food-stuffs and confectionery must be composed of "fine tin," that is, an alloy containing at least 90 per cent. of tin.—*British Medical Journal*.

HAIR TONIC.—To prevent the falling out of the hair, Dr. Bordet, in *Med. Chirurg. Rundschau*, gives the following formula :

Take of

Carbolic acid 30 minims.
Tinct. of nux vomica . . 2 drs.
Comp. tinct. chinchona . 1 fl. oz.
Tinct. of cantharides . . 30 minims.
Cologne water 1 fl. oz.
Cocoonut oil, to make . 4 fl. ozs.

Mix.

To be applied to the scalp twice a day with a small sponge.

COLOR OF HOT WEATHER CLOTHING.—As the hot summer months are near us, it may not be amiss to call attention to the modification of an old rule lately given by Bubnow in *Deutsch. Med. Zeitung*. This writer advises the wearing during hot weather of white clothing, having a black or dark colored lining.

Bubnow believes the dark skin of the inhabitants of the tropics to result from a reaction effected by the actinic rays of the sun upon the skin.

ATHLETICS AND SCHOLARSHIP.—Professor Richards, of Yale College, has made a study of the records of 2,425 students, in order to determine, if possible, the relations of athletics in Yale to scholarship. The general result is that the athletes fall slightly behind the non-athletes in scholarship, but not so much as to demand a sup-

pression of such exercises. In some branches of athletic exercises the students who engage in the sports are above the average of the non-athletes in scholarship.

THE FOOLISH FARMER.—A very foolish man, says an exchange, is he who robs himself of the comforts of life that he may accumulate a great fortune for his heirs. More foolish is the farmer's family who live uncomfortably in the kitchen—usually the dingiest and most uninviting room in the house—keeping the best rooms darkened, waiting for company. Better, a hundred times better, live in those cozy, comfortable rooms all the time. They will seem all the more cozy when the company comes.

TYROTOXICON IN OYSTERS.—A boy in a printing office in Battle Creek, Mich., took an oyster stew at a restaurant, and in a few hours was taken very sick with vomiting and purging. Dr. Kellogg of the State Board of Health sent for some of the oysters, and obtained a good test for tyrotoxin. A few days afterwards he sent for some more oysters from the same restaurant, from which he also obtained tyrotoxin. The oysters had been received in kegs and kept open, thus giving a good opportunity for the tyrotoxin to develop.—*Proceedings Mich. Board*.

WASHING CARPETS.—To many people it does not seem to occur that a carpet can be washed. They would be astonished to see what an improvement can be made in this way, says an exchange. Take a gallon of water in which two ounces of carbonate of ammonia have been dissolved, and apply it with a soft rag to each breadth. If

there be any pronounced soils and stains or grease spots, procure from your butcher a pint of ox-gall. Mix it with three quarts of water and apply with a soft scrubbing brush, taking care to rinse thoroughly afterwards with pure water.

LAUNDRIES.—All laundries should be carefully looked after. An exchange reports the case of a woman who lived in a tenement in Brooklyn in which there was a case of malignant diphtheria. She did the laundry work for a well-to-do family in Brooklyn and another in Bedford, and in forty-eight hours after she carried home the weeks clothing the disease broke out in its worst form in both these families. In one it destroyed the life of two children and left the mother and a child invalids; in the other the only child, a brilliant boy, died and both parents narrowly escaped.

ABOUT DIRTY NEIGHBORS.—Dr. Russell, the able medical officer of health of Glasgow, says: The ultimate cause of the existence of communicability in disease is, I believe, to enforce the golden rule upon us in reference to the physical well-being of mankind. The practical question is, "What am I to do with my dirty neighbor?" We must bring to the solution of it a little common sense and ordinary business principles as well as philosophy. There must be power to prosecute and punish dirty neighbors for over-crowding and other nuisances which affect the well-being of neighborhoods. The principle must be not to do anything for them, but make them do it for themselves, and bear expense, as they reap the benefits. In

this way a process of education would be carried on.—*Sanitary Inspector*.

SUSPENDERS.—The custom of wearing the pantaloons buttoned tightly at the top, and sustained by the hips, produced so much disease even among the hardy soldiers of the Russian army, that a law was enacted making the wearing of suspenders compulsory. If strong men suffer thus, how much greater must be the injury to frail, delicate women! The constant pressure and unnatural heat to which the lower part of the back is subjected, is one of the chief causes of the frequency of kidney diseases among women. Here is found the source of "weak back," lumbago, pain in the side, and several other diseases of the trunk which affect so many thousands of American women.—*Good Health*.

THE EARTH'S DEATH RATE.—The *Anti-Adulteration Journal* says:—"The death-rate on the earth is calculated to be sixty-seven in a minute, or 4,020 an hour, 96,480 a day, 35,215,200 a year. The birth-rate slightly exceeds this. It is calculated to be seventy per minute, 4,200 in an hour, 100,800 a day, or 36,792,000 in a year. The estimated increase per annum, according to this, is, therefore, only a little more than 1,500,000, and it will be many centuries before our earth gets to be so crowded that the inhabitants will jostle each other over the edge into space. The Malthusian's ideas regarding over-population need not, therefore, detain any one from marriage."

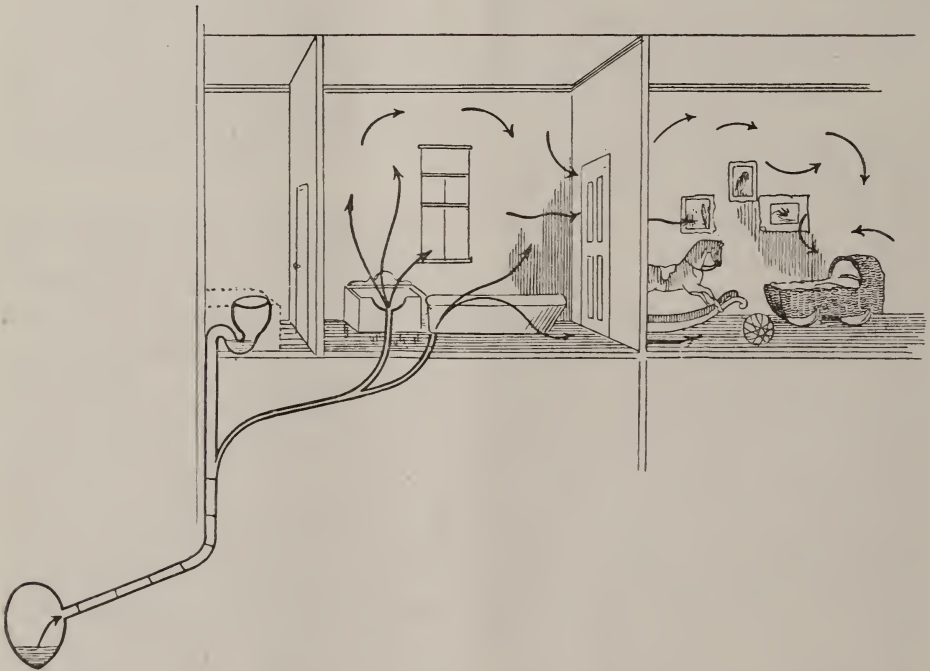
THE MORPHINE HABIT.—The morphine habit, which is causing such an amount of talk in France, is receiving attention from English reviewers and

medical men. It would appear, according to some of the commentators on the vices of dissipated folk, that all sorts of ghastly dissipations have been adopted by women who have nerves and other idiosyncrasies.

On the other side of the water tea cigarettes have been superseded by cigarettes filled with various herbs, including opium, which are smoked by the women of London who run to that sort of thing, while the number of ingenious drugs which have been introduced among the women of Paris is too long to enumerate.

us, and how very commonly will we hear the devoted mother lamenting over her darling's ill-health, usually ascribing it to "*a mysterious dispensation of Divine Providence.*" By the aid of this drawing, (which we have reproduced from *Teale's Dangers to Health*), we are enabled to make plain the cause of this ill-health, in many cases. Owing to defective plumbing, we see the foul sewer gases easily finding their way back into baby's nursery to poison, and perhaps to exterminate his frail and valuable little life.

A TEST FOR TEA.—A Russian ana-



A HINT TO MOTHERS.—Let us imagine the cradle before us occupied most of the time by a fretful, whining, peevish, sickly child, that ought by rights, to be rollicking with the rocking horse and lustily playing with the ball. What an every day occurrence this imaginary picture will present to

lyst gives the following as a test by which tea can be proved to be genuine or not: Take a pinch of tea in a glass, pour upon it a little cold water and shake it up well. Pure tea will only slightly color the water, while a strong infusion is quickly got from the adulterated or painted leaf. Now boil

both sorts separately, and let them stand till cool, and the difference between them will be most marked. The false tea will become still stronger after a long standing, but will remain transparent. Whereas pure tea will become muddy or milky. This last appearance arises from the tannic acid, which is a natural property in pure tea, but which in artificial tea is entirely absent.

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EMBALMING.—The best process of embalming is called the "Brunelli Process." The circulatory system is cleansed by washing with cold water till it issues quite clear from the body. This may occupy from two to five hours. Alcohol is injected so as to take out as much water as possible. This occupies about a quarter of an hour. Ether is then injected to abstract the fatty matter. This occupies from two to ten hours. A strong solution of tannin is then injected. This occupies for imbibition from two to ten hours. The body is then dried in a current of warm air passed over heated chloride of calcium. This may occupy from two to five hours. The body is then perfectly preserved and resists decay.—*Med. Bulletin.*

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SANITARY DEFENSES IN FLORIDA.—According to the *Sanitary Era* the State Board of Health has published rules for the guidance of county, town, and other officers, as well as for the instruction of individuals. They authorize the destruction of infected property, enforce house-to-house inspection in cities and towns once a month, compel the adoption of a sewerage system in all the municipalities of 10,000 or more inhabitants, and require special monthly reports during May, June,

July, August, September and October. The regulations for quarantine and disinfection along the seaboard are all very strict, but the money at present available is insufficient, and application is made to the Government at Washington for such aid and co-operation as may be lawfully given.

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CLEAN UP.—Now is the time to clean up, (says *The Health Journal*); that is, if every spot has not been *kept* thoroughly clean. Within, from cellar floor to roof; and without, from back-yard limits, (for it will be best to begin there) to street. Dust and scrub, rake and dig, and burn with fire, till every spot is absolutely clean, and the whole premises are free from every trace of waste or refuse. Use soap and carbolic acid freely within the dwelling, and lime wash outside. If any animals are kept,—fowls, dogs, pigs, or any other, see that the places they inhabit are made and kept as clean as it is possible to make or keep them. This is a matter of economy if nothing more. For all animals, as well as men, women, and children, will thrive and do better if kept clean.

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IDLENESS AND INSANITY.—A Boston contemporary says the necessity of labor for human happiness is at present strikingly shown in the state prisons of New York. Owing to some neglect of the legislature the convicts are left without employment. The result is a great increase in insanity. One of the physicians recently resigned, giving as a reason that constant idleness would produce a condition of misery that he would be powerless to alleviate. Besides, as men are constantly going insane, the danger to keepers, physicians and attendants

greatly increases. While kept at work comparatively few become sick, and only occasionally does one become insane. Idleness has filled the hospital, and an average of three every week become unmanageable and are sent off to the insane asylums.

PHOTOGRAPHING THE VOICE.—It is asserted that the human voice can be photographed and presented as an illustration, by the following means, the very recent method evolved by a foreign artist. A piece of parchment is stretched like a drum, and in the centre a very thin piece of silver polished glass is stuck. These have a ray of light coming through a pinhole, with a piece of talc, colored green, in front of it. The ray is arranged to fall upon the polished silver glass, then the reflected ray upon a sensitive plate, which is gradually kept moving at a distance of three feet from the silver polished glass. The drum behind the glass is then spoken to, and the vibrations of the parchment diaphragm caused by talking to it, will be recorded on the sensitive plate after developing. Different voices give different vibrations.—*Paper and Press.*

WATER IN OBESITY.—Lorenzen of Erlangen, has made some experiments on himself in regard to the influence of liquids on obesity. For a period of nine years he drank daily a large quantity of Erlanger beer. For four years of this period the quantity consumed daily amounted to 10 litres, or about 22 pounds; during the remainder of the period the quantity was between 5 and 7 litres, with one litre of wine. In this way he succeeded in increasing his body weight by 78 pounds. On shutting off the liquids

his weight fell 14 pounds in 7 days; but when more water was taken, even without alcohol, the weight again increased. Within five weeks he reduced himself 28 pounds. Similar experiments carried out on some of his heavy colleagues, gave similar results. Lorenzen explains the disappearance of fat, when fluids are withheld, on the hypothesis that the cells, whose province it is to decompose albumen, when a large quantity of fluid is taken, now expend a part of their energy in the combustion of fat.—*Medical Press.*

THE PRESCRIPTION.—There was, some time ago, a doctor whose morning levees were crowded beyond description. It was his pride and boast that he could feel his patient's pulse, look at his tongue, probe at him with his stethoscope, write his prescription, and pocket his fee, in a space of time varying from 2 to 5 minutes. One day an army man was shown into the consulting room, and underwent what may be called the instantaneous process. When it was completed the patient shook hands heartily with the doctor, and said: "I am especially glad to meet you, as I have often heard my father, Colonel Forester, speak of his old friend Dr. L." "What!" exclaimed the doctor, "are you Dick Forester's son?" "Most certainly I am." "My dear fellow, fling that infernal prescription into the fire, and sit down quietly and tell me what's the matter with you."—*Murray's Magazine.*

THE EFFECT OF PRISON LIFE ON JAMES D. FISH.—The benefit of a regular life, (meals at the same hour, "early to bed and early to rise," plain, substantial diet, regular work

and all that goes to make up a life of regularity), has seldom received a more striking and convincing proof than in the case of James D. Fish, (of Grant & Ward fame), the ex-bank president. At 67 years of age he entered the New York State Penitentiary at Auburn, with his health, as he himself described it, only *fair*; now at over 70 years of age, he comes out with his physical condition *excellent*; this improvement unquestionably due to the regular life that he was forced to lead. We would hardly like to recommend the incarceration of all who do not lead healthy lives, but we know many foolish persons whose health and happiness would be materially improved if they could be *compelled* in some way to lead regular lives, for such people as we have in mind will not listen to *moral suasion*.

BATHING IN JAPAN.—In the prefecture of Hyogo, the regulations respecting mineral springs were promulgated, the principal points of which were as follows: Occupancy is to be for three purposes, namely, for bathing, for drinking the waters, and for selling the waters to be drank; care must be taken to secure the admission of good air and sunlight to the bath-rooms; in private bath-rooms the mixed bathing of males and females above ten years of age is forbidden, except for one or two families, or in the case of fellow visitors; a table of analysis and a statement of medicinal value, and a notice as to the mode of bathing and drinking must be posted in each room, and the neighborhood must be kept clean; those who prepare baths in other places by carrying thither spring water must change the water daily; those who sell the water for

drinking purposes must paste a label on the vessel giving the name of the spring, its medicinal value, directions for use, and address of the seller.—*Sei-i-kwai*.

DAMAGES FOR DEATH FROM INEBRIETY.—A man in New York drank to intoxication in a saloon and was drowned on his way home in a small stream. His widow sued the saloon-keeper for damages. The jury brought in a verdict for the widow and the case was appealed. In the Supreme Court the judgment was confirmed. The judge said the evidence was clear that the death of the plaintiff's husband was caused by his intoxication, arising in whole or in part by the liquor furnished by the defendant. The law in this case was the Civil Damage Act of 1873, of New York State, which provides as follows: "Every husband, wife, child, parent, guardian, employer, or other person who shall be injured in person, property, or means of support by an intoxicated person, or in consequence of the intoxication, habitual or otherwise, of any person, shall have a right of action against any person or persons who shall by selling or giving away intoxicating liquor have caused the intoxication in whole or in part."—*Quarterly Journal of Inebriety*.

TO STAMP OUT CONSUMPTION.—
1. Teach the people the true nature of tuberculosis—that no one ever has tubercular consumption unless the tubercle bacilli find their way into the lungs.

2. Teach them also that, even if it finds its way there, it will not grow unless the conditions are right. Teach fathers and mothers how to rear healthy

boys and girls. Tell them what to eat and what to wear, and to exercise, and to breathe fresh air. This alone would exterminate phthisis.

3. The contagion must be destroyed. Fortunately the consumptive patient gives off the poison only in the expectorations, or perchance the other excreta, if the disease extends beyond the lungs, and the virus is not given off from these while moist. We must therefore disinfect all sputum at once with mercuric bi-chloride. Cloths must be used instead of handkerchiefs, and then burned; or, if the latter are used, they should be often changed, and immediately put in a bi-chloride solution and boiled. Bed linen should be treated in the same way.—DR. C. V. CHAPIN.

LONDON'S SMOKE CLOUD.—The weight of the Smoke Cloud which daily hangs over London has been estimated by Professor Chandler Roberts, says the *Engineering Times*, to amount to about 50 tons of solid carbon and 250 tons of carbon in the form of hydrocarbon and carbonic-oxide gases. Calculated from the actual result of tests made by the Smoke Abatement Committee, the value of coal wasted in smoke from domestic grates amounts, upon the annual consumption of 5,000,000 of people, to \$11,282,500. The cost of cartage on this wasted coal is calculated to be \$1,343,750, while the unnecessary passage of about 1,500,000 horses through the streets in drawing it, adds seriously to the cost of street cleaning and repairing. Then there is the cost of taking away the extra ashes, \$215,000 per year. Summing it all up, the direct and indirect cost of waste coal may be set down at \$13,000,000, plus the additional loss from the damage done

to property caused by the smoky atmosphere, estimated by Mr. Chadwick at \$10,000,000, the whole aggregating, \$23,000,000. *The Sanitarian*.

NAPHTHA-POISONING IN RUBBER FACTORIES.—In several large factories in Germany, especially in india-rubber factories and establishments for cleaning india-rubber, peculiar morbid symptoms have lately been observed. The faces of many of the girls, who had not left the factory during the day, became flushed and swollen in the evening, and they could not walk steadily. An examination of their clothes and of the work-rooms for brandy, opium, etc., yielded no result, till an accident led to the solution of the mystery. In these factories naphtha is used in large quantities, and kept in special boilers closed against the air. The girls had succeeded in getting keys to the boiler valves, and, soon learning the intoxicating effect of naphtha, were in the habit of slinking unobserved to the reservoirs to inhale the poison, which threw them into a state of happy forgetfulness and conjured up a thousand sweet dreams of wealth, splendor, happiness, etc. The secret was revealed by a novice, who made too deep an inhalation and fell into hysterical convulsions.—*Lancet*.

INFECTION OF AN INFANT THROUGH THE MILK OF A TUBERCULOUS NURSE.—Dr. Steigenberger, of Buda-Pesth, has recorded a case of tubercular infection through the nurse's milk in the *Pesther medicinisch-chirurgische Presse*. The facts of this interesting case are summarized as follows: An infant, aged five months, of healthy parentage, developed caseating cervi-

cal, glandular abscesses, of a distinctly tubercular kind. Microscopical examination verified the macroscopical diagnosis. Inquiry elicited the fact that the infant had been nursed, for a period of four weeks, by a woman who had to be discharged on account of phthisis, with abundant expectoration. The etiological relationship was thus clearly established.

The infection of human beings through the milk of tuberculous animals has been repeatedly shown, and there is, of course, no reason why the human milk should not carry with it the same pathogenetic power. But, so far as we are aware, (says the *Med. Record*), the above case is the first instance in which this method of transmission has been actually observed to occur. The inference is obvious, namely, to exercise the greatest possible amount of care in the selection of wet nurses.

ANALYSIS OF BUTTER.—It is reported from Washington, under date of May 4, that the Agricultural Department has been making an analysis of butter from cows fed on cotton seed meal, which produces unlooked for results. The analysis showed remarkable points:

1. A low percentage of volatile acids.
2. A phenomenally high melting point.
3. A strong persistence of the reducing agent.

The first point is of importance as showing that mixing cotton seed with the feed of cows in the South will tend to raise the melting point of butter, thus rendering it more suitable for consumption in hot climates.

According to Professor Wiley the

results are of great importance from an analytical point of view, since they show that a butter derived from a cow fed on cotton seed meal might be condemned as adulterated, when judged by the amount of volatile solids present. Since cotton-seed-meal is destined to be a cattle food of great importance, especially in the southern part of the United States, this is a fact of the greatest interest to analysts and to dealers.—*Med. and Surgical Reporter*.

THE MEDICINAL VALUE OF COLOR.

—At a time when fog is prevalent, any mention of the remedial value of color and brightness appears extremely tantalizing, although from personal experiences of the depressing influences of darkness and gloom it is probable that every one will rate the contrasts more highly than at any other time in the whole year. Color treatment has been suggested for various forms of mental derangement—bright crimson surroundings for melancholia, soft blue for maniacal excitement, and so on. The report which has reached us leaves much to be desired from a scientific standpoint; meanwhile there is very little room for doubt that a prolonged period of darkness largely influences the mental attitude, and, by hope deferred, favors a general feeling of misanthropy. Pessimism flourishes in the autumnal and winter seasons, optimism in spring and summer, even though the statistics of deaths from suicide show an increase in bright weather. To restate a belief in the remedial value of color is merely to insist upon the therapeutic effects of change, since, in advising change of scene, brightness and interest are always the objects sought. No one

would recommend a course of fogs as an alternative for sunshine. In other words, stimulants, as a rule, are more valuable than depressants.—*Lancet*.

HEREDITARY ALCOHOLISM.—The effects of hereditary alcoholism are interestingly described by Dr. T. D. Crothers in a recent number of the *Popular Science Monthly*. In persons of sound mind, but infected with an alcoholic taint, Dr. Crothers has observed some singular instances in which, at times of excitement, and without any use of intoxicants, every symptom of intoxication is exhibited. "An unfortunate treasurer of a large manufactory upon being accused of falsifying his books, suddenly appeared to be intoxicated, both looking and walking like one who had drunk large quantities of spirits. The next day he recovered and then made a full and satisfactory explanation. His father had been a sailor and a free drinker. Hardly less astonishing is the sudden, sympathetic drunkenness of persons who have formerly been addicted to excessive use of intoxicants. A prominent military man dining with some old comrades who became intoxicated, suddenly, though he had drunk nothing but coffee, became as hilarious as the rest, made a foolish speech, and at length had to be taken home in a state of stupidity."

JUVENILE INEBRIETY IN AUSTRIA. The temperance of Austrian woman has long been proverbial; but, if the accounts recently published respecting the intemperance of boys and girls in that country are reliable, we fear that Austria will not continue to sustain its former good character for feminine sobriety. So serious and widespread

has inebriety been of recent years among school children that the Vienna School Board have, though hitherto ineffectually, been making strenuous efforts for the prohibition of the sale of intoxicating drinks to children. The Board has just resolved to invoke the intervention of the Government, and a bill is to be laid before Parliament during the present session to prohibit the selling of intoxicants to boys and girls under fifteen years of age. So alarming is the present state of matters that the appearance of a boy at school in a state of drunkenness is by no means a rare sight. During the winter poor children are often sent to school with only a glass of the cheapest spirits for breakfast, partly to allay hunger and partly to "keep out the cold"—that venerable delusion which still lingers in England. Slav children of the tender age of five and six years are so "seasoned" to alcohol from infancy by the administration of small quantities in milk that these youthful scholars can take a liberal dram without showing any symptoms of intoxication.—*British Medical Jour.*

QUAY'S PISCATORIAL WISDOM.—During the past winter the whole country has been sounding the praises of Senator Quay's extraordinary political wisdom. Now, it is our turn to sound the praises of his good "common sense." As we understand it, Senator Quay is not, naturally, a very robust man, yet his capacity for work and the amount that he accomplishes must be something prodigious. But, let us not lose sight of the fact, that a very large portion of his time is given to play. Now, he is in the wilds of Florida, again he is off on a yacht; now he is fishing at Atlantic City, and, the next

we hear, he is away off in his country home, rusticating. It is a point worthy of very serious consideration (and it should be 'pasted in the hat' of every one) that all really great men find plenty of time for recreation. President Harrison, Vanderbilt, Gould, Drexel, Gladstone, Bismarck, Dom Pedro, and all men who make progress, all the men who make great names and great fortunes, have plenty of time to properly eat their meals, to have plenty of recreation and to find a full quota of sleep. It is only those men who never rise to any special prominence that are too busy to find time to properly eat, sleep or play. The relation of cause to effect is well worthy of contemplation in this connection. Surely, Quay does not do less sagacious work because of his numerous fishing expeditions, may it not be that they have something to do with the brightness of his intellect and the keenness of his perception.

A LAYMAN ON VENTILATION.—

An intelligent farmer called upon us to enter his name upon our subscription list, and, being of a social turn of mind, sat down for a little chat. One incident that he related was so forcibly put, and its like is so frequently seen, that we cannot forbear relating it: Said he:—"How little people in general know about the worth of pure air. Why, to illustrate, a neighbor of mine has a baby that has been ill for several weeks. It is kept in a small room heated by a stove, and the mother is so afraid that it will take cold that she has battened up all the crevices around the windows, and has hung a quilt at the door so that not a breath of air can enter. The little one is kept in the prison of hot, foul air, and is

being slowly poisoned to death. The girl told me as I came by to-day, that they were afraid the baby had taken a little more cold, as it was not quite so well. Of course it's only a question of days that the baby can hold out against this kind of treatment. Its life is being slowly taken by the loving-kindness of parents ignorant of Nature's requirements."

We have seen this condition of affairs so often that we know that it is no over-drawn account. Scores of children are every year sacrificed by being deprived of a sufficient quantity of pure air to keep the blood in a healthy condition, and the general functions of the system in vigorous activity.—*The Sanitary Volunteer*.

THE SANITARY REQUIREMENTS OF A DAIRY FARM.—The medical officer of Glasgow, Dr. Russel, has drawn up a memorandum on these, as follows: 1. A farmhouse ought to be wholesome in structure, and the steading well supplied with pure water, drained by vitrified pipes and with privy accommodation for both sexes. 2. The house ought to stand apart from the premises used for dairy purposes. A distinct domestic washing-house is indispensable. The milk house ought to be open unto the free air, and be at a distance from the dung-pit. The dung-pit ought to have retaining walls, an impervious bottom, and a light roof borne on pillars. 3. The byre ought to be well lighted, ventilated, paved, and regularly cleaned. 4. No person who suffers from infectious or any recent indefinite illness, or who has been in any way in communication with an infected person or thing, should engage in the milk business. 5. The milk of no animal which seems to be

ill, or which has any sore about the udder or teats, ought to be sold for human consumption. 6. The udder and teats if soiled, ought to be washed before milking; soap, warm water, and towels ought to be at hand; and every milker ought to wash his hands before beginning. 7. Healthy cattle, healthy servants, cleanliness in every detail of the business of a dairy farm, mean money to the producer and retailer of the milk.

SOME POPULAR MEDICAL SUPERSTITIONS.—In a book entitled “A Bird’s-eye View of France in the Middle Ages,” M. Challemelet refers to a number of superstitions which were current at that time, many of which have not yet died out. There were several means of warding off fevers. One was to eat neither meat nor eggs at Easter and on other solemn festivals; another to carry about on the person a piece of a human bone; and still another to pluck and eat the first daisy found in the field. In order to cure a fever the sufferer would rise early in the morning and go out into the field, walking backward all the time, pluck a handful of herbs, and without looking at it, throw it behind him, and then return quickly to the house. The fever then forsook him and fastened itself upon the devil. The Bretons preserved their children from all evils by putting on them a damp shirt. A knife with a white handle was a sure preservative against colic. The toothache was quickly relieved by touching the painful part with a dead man’s tooth. Running here and there, without particular aim, through a church, was sufficient to ward off pleurisy. The formation of gall-stones was rendered impossible by

rolling one’s self naked in a field of oats. Spitting in the mouth of a live frog was a very efficacious remedy for a cough. Earache was cured by touching the ear with the hand of a skeleton, and headache was quickly relieved by binding the temples with a cord by which some one had been hung.—*Journal de Médecine et de Chirurgie Pratiques.*

HOUSE-CLEANING — REMOVAL OF DUST.—In house-cleaning the end to be achieved is the abolition of dust and dirt, says *The Health Journal*. The first object, then, is the collection of these obnoxious substances in a small compass, preparatory to disposing of them. Begin with the small articles, washing and wiping those that require it, and dusting others. Then, when perfectly clean, remove them from the room. (In cases where this is impossible they may be laid upon the bed, which must be covered with a large dusting sheet.) The furniture must now be brushed and cleaned, so much of it as is possible may be removed from the room, the rest covered with dusting sheets. Now, dust the walls thoroughly and every mirror and picture, especially its back, with a large feather brush. By this time we will assume that all the dust and dirt of our apartment are gathered upon the carpet. With a broom clean every corner, working towards the centre.

Now, when these lurking places are thoroughly cleaned out, bring in a carpet-sweeper, and with it gather up the whole collection, driving the machine systematically back and forth, as the farmer does his plow, leaving a clean furrow each time. When this is accomplished wait a few moments until the dust can settle, so that you may

know where it is. Again bring forward the large feather duster, brush again the pictures and mirrors, wash- ing such as have soiled glasses. Remove the dusting sheets and shake them from the window, or somewhere out of doors. Restore the furniture and ornaments to their places, and the work is done, with one-half the weariness, and an excellent result, impossible without care and system.

DISINFECTING COMPOUNDS.—As the hot weather is rapidly approaching, the following formulas collected from various sources may be of interest and value:

CHLORALUM.—

Aluminum chloride, 20 oz.
Sulphate of lime, $\frac{1}{3}$ "

BROMO-CHLORALUM.—

Aluminum chloride, 13 oz.
Bromine, sulphate lime, etc. traces.
Per gallon.

COLLINS' DISINFECTING POWDER.—

Dry chloride of lime, . . . 2 parts.
Burned alum. 1 part.

Mix—

Use either dry or moistened with water.

SIR WILLIAM BURNETT'S DISINFECTING LIQUID.—

(a) Hydrochloric acid } of each $2\frac{1}{2}$ parts.
Water, }
Sheet zinc, 1 lb.

Dissolve, filter through calico; add solution of hypochlorite calcium 1 fl. oz. and evaporate by boiling to one pint; when cold pour into a bottle, add of prepared chalk 1 oz. and add water sufficient to make one quart; agitate occasionally for 24 hours; decant or filter, and preserve the liquid in a stopped bottle.

(b) Granulated zinc, 4 lbs.
Hydrochloric acid, 4 lbs. or q. s.
Water, 9 qts.

Dissolve, avoiding excess of acid. The

solution contains 1 in 12 of zinc chloride which is recommended as a convenient strength for disinfecting.

ELLERMAN'S DEODORIZING FLUID.—

This is said to contain the chlorides and perchlorides of iron and manganese.

CONDY'S DISINFECTING FLUID.—

Pernanganate of potassium, 2 parts.
Water, 100 "

ADMISSION OF AIR TO ROOMS.—

Air should be introduced and removed at those parts of the room where it would not cause a sensible draught. Air flowing against the body at, or even somewhat above the temperature of the air of the room will cause an inconvenient draught, from the fact that, as it removes the moisture of the body, it causes evaporation or a sensation of cold. Air should never, as a rule, be introduced at or close to the floor level. The opening would be liable to be fouled with sweepings and dirt. The air, unless very much above the temperature of the air of the room, would produce a sensation of cold to the feet.

It may be regarded as an axiom in ventilating and warming, that the feet should be kept warm and the head cool.

The orifices at which air is admitted should be above the level of the heads of the persons occupying the room. The current of inflowing air should be directed toward the ceiling, and should either be as much subdivided as possible by means of numerous orifices, or admitted through conical openings with the smaller opening toward the outer air and the larger openings toward the room, by which means the air of the entering current is very rapidly dispersed. Air admitted near the ceiling very soon ceases to exist as a distinct current, and will be found at a very short distance from the inlet to

have mingled with the general mass of the air and to have attained the temperature of the room, partly owing to the longer mass of air in the room with which the inflowing currents mingle, partly to the action of gravity in cases where the inflowing air is colder than than the air in the room.—*Sanitary News*.

BE YOUR OWN BARBER.—“*The Druggist*” tells us that a good shampoo for removing dandruff, etc., from the scalp may be prepared by dissolving borax in water, with or without the addition of a little carbonate of ammonium. Very generally carbonate of potassium is used by barbers. The proportion of these salts is about one-half ounce to the pint.

W. Morris recommends the following :

Take of

Water of ammonia . . . 2 fl. drs.
Carbonate of potassium . 30 g's.
Tincture of soap 1 fl. oz.
Soft water, to make . . . 16 fl. ozs

Mix and perfume to suit.

Another formula is to

Take of

Alcohol 8 fl. ozs.
Water 16 fl. ozs.
Water of ammonia . . . 1 fl. oz.
Cologne 1 fl. oz.

Mix.

A stimulating effect may be produced by the use of some alcohol or bay rum. The following is a good preparation :

Take of

Borax 1 troy oz.
Carbonate ammonium . 4 troy drs.
Aromatic sp. ammonia . 1½ fl. ozs.
Bay rum 4 fl. oz.
Water, to make 1 quart.

Phillips has for years sold the following to barbers :

Take of

Tincture of arnica . . . 1 fl. dr.
Tinc. of cantharides . . 2 fl. drs.
Water of ammonia . . . 3 fl. drs.
Alcohol 8 fl. ozs.
Soft Water 8 fl. ozs.

This produces a copious lather or foam.

A so-called fluid shampoo is made as follows :

Take of

Fluid extract quillaya . 2 parts.
Glycerin 1 part.
Cologne water 2 parts.
Rose water 7 parts.
Alcohol 4 parts.

Mix.

WARM FOOD VERSUS DRINK.—

Indulgence in intoxicating drinks, though a consequence of diverse causes, is admitted to be in many cases closely connected with the want of suitable food (*The Lancet*). Among working people this want is particularly felt. It is a common thing to find that in establishments where a number of persons are employed during the whole day no adequate provision, if any at all, is made for meals. Time only is allowed. We cannot, indeed, expect that all employers will cater for their workpeople, though many firms do so. Such an arrangement, though sometimes convenient, is not indispensable. In large manufactories or warehouses it would probably be impracticable. The employed must, in this case, provide for himself. In order to do this, unless his work be near home, two courses alone are open to him ; either he must carry food for the day to the warehouse or factory, or he must rely upon some neighboring restaurant for the supply of his needs. Given a conveniently situated eating-house, his difficulties are considerably lessened, and in large towns he may in this way obtain all that he requires. Still, it

may be doubted if, even in the metropolis, his opportunities of refreshment, apart from the ever-open public-house, are all that could be desired. There is also the question of cost, and a very cheap meal may, with the addition of train or car fares, become too dear for a short and burdened purse. If the day's provision is carried from home, the cost will probably be less, but meals must often be taken cold. Some change of plan seems here very desirable. It has often occurred to us that if an arrangement could be brought about by which the food and drink thus carried by the worker could be heated at his place of occupation, the effect on his health, comfort, contentment, and labor would justify its adoption. The cup that so often inebriates those it cheers would not then be, as it now too commonly is, the one article of diet possessing any apparent pretensions to warmth.

THE DREAD OF DEATH.—Sir Lyon Playfair, in a letter to Junius Henri Browne, author of a paper with the above title, says: "Having represented a large medical constituency (the University of Edinburgh) for 17 years as a member of Parliament, I naturally came in contact with the most eminent medical men in England. I have put the question to most of them, 'Did you, in your extensive practice, ever know a patient who was afraid to die?' With two exceptions, they answered 'No.' One of these exceptions was Sir Benjamin Brodie, who said he had seen one case. The other was Sir. Robert Christison, who had seen one case, that of a girl of bad character who had a sudden accident. I have known three friends who were partially devoured by wild beasts

under apparently hopeless circumstances of escape. The first was Livingstone, the great African traveller, who was knocked on his back by a lion, which began to munch his arm. He assured me that he felt no fear or pain, and that his only feeling was one of intense curiosity as to which part of his body the lion would take next. The next was Rustem Pasha, now Turkish ambassador in London. A bear attacked him, and tore off part of his hand and part of his arm and shoulder. He also assured me that he had neither pain nor fear, but that he felt excessively angry because the bear grunted with so much satisfaction in munching him. The third case is that of Sir Edward Bradford, an Indian officer, now occupying a high position in the India Office. He was seized in a solitary place by a tiger, which held him firmly behind the shoulders with one paw and then deliberately devoured the whole of his arm, beginning at the hand and ending at the shoulder. He was positive that he had no sensation of fear, and thinks that he felt a little pain when the fangs went through his hand, but is certain that he felt none during the munching of his arm."—*B. M. J.*, March 2.

THE DAY OF REST.—Sunday freighting or Sunday secular activity of any sort costs more comparatively and in the long run than such activity on other and regular work days. It may not cost more in actual wages paid (though in most cases it does), but it costs in detracting from the average, week out and week in, efficiency and value of employees. Railroad engineers and firemen and brakemen and conductors, or men in any other employments who are on duty seven days

in the week are less competent to do efficient work than men who put off the work harness one day in seven. It is a teaching of experience—admitted by observant men who have been large employers—that an average workman performs more and better work laboring ten hours than twelve hours per day, or six days rather than seven days per week.

In this view, which employers all over the country are coming to adopt, the railroad managers are discovering that it costs them more—quality as well as quantity of service being considered—to work than to refrain from working Sunday trains. In this fact, then, is undoubtedly found one of the principal reasons for the abandonment of Sunday freight trains by certain of the roads as a regular part of railroad work. Still, it is not fair to conclude that the motive governing in this matter is wholly selfish, or that the factor of morals has not entered into the calculation of the managers. Our time is progressive, and the world is growing better. The world is also finding out, as illustrated in this reform by the railroad men, that, on the whole and judged broadly, the method of doing business which is moral and tends to uplift men is also the most profitable, considered alone from the low standpoint of selfishness.

THE PHYSICIAN'S CARE OF HIS HANDS.—Dr. George Meyer, of Berlin, writes (*Berliner Klin. Med. Woch.*, Jan. 14, 1889,) that in these days when the physician is compelled to wash his hands frequently with disinfectants, they soon get into a deplorable condition. Redness, eczema, and small abrasions of the skin, the consequences of the frequent washings and

brushing with antiseptics, are at times so annoying that in order to gain relief, temporary abstinence from the use of antiseptics seems the only remedy. Many methods have been resorted to, to render the hands soft and smooth, but one special method recommended to the author by Professor Liebreich seems especially worth mentioning.

After having washed the hands with soap, and thoroughly dried them, apply a small amount of lanolin; rub this over the entire hand, and remove *any surplus with a dry towel*. A small amount of perfume will render the preparation more acceptable. Thus, the following is very good:

R—Lanolin, 500 parts.
 Vanilla, 1 part.
 Oil of Roses, 2 parts.—M.

Or

R—Lanolin, 1000 parts.
 Liquid paraffin, 250 parts.
 Vanilla, 1 part.
 Oil of roses, 2 parts.—M.

For the busy practitioner, such an ointment put up in metal capsules, like oil paints, would be very useful. The author states that for years he suffered from lobster-red hands, which chapped as soon as the cold weather set in. Since using lanolin his hands have become white and smooth. He has recommended this remedy with similar benefit to actresses whose faces suffered from the application of cosmetics.

The *Archives de Pharmacie* gives the following formula for lanolin cream:

R—Lanolin, 5 parts.
 Sweet oil of almonds, . . . 5 “
 Precipitated sulphur, . . . 5 “
 Oxide of zinc, 2½ “
 Extract of violets, . . . 5 “
 Extract of alkanna (to
 give a rose color, . . . 9½ “ —M.
 —*Med. News.*

DIET IN DYSPEPSIA.—The *Dietetic Gazette* for April says "the diet should be strictly according to the following table :

MAY TAKE

Soups, Etc.—Thin soups, beef tea, broths.

Fish.—Raw oysters.

Meats.—Beef, mutton, lamb, chicken, game, venison, chopped meat, meat pulp.

Eggs.—Poached, soft boiled, raw or whipped up with water and liquor or wine.

Bread and Farinaceous Articles.—Bread sparingly, corn bread, rice cakes, stale bread and butter, macaroni, sago, tapioca, dry toast.

Vegetables and Fruits.—Green vegetables, such as spinach, turnip tops, cresses, salads, celery, sorrel, lettuce, string beans, dandelion, chicory, asparagus; oranges, ripe peaches and pears.

Drinks and Liquids.—Water, abundantly; hot water an hour before meals; koumiss, buttermilk, milk and lime water, milk and seltzer, tea, claret, dry wines.

Thoroughly masticate all foods.

AVOID

Rich soups, all fried foods, veal pork, hashes, stews, sweet potatoes, all starches, and saccharine articles except as allowed, all gravies, made dishes, sauces, desserts, pies, pastry, puddings, ice cream, sweet wines, malt liquors, cordials, uncooked vegetables, white potatoes, cooked oysters.

In addition it will be necessary to give thirty drops of dilute hydrochloric acid together with about ten grains of a good pepsin after meals, and the bowels should be kept open. The great difficulty will be to hold the patient to the strict diet. In order to obtain success, however, this must be done, and in the majority of cases the result will fully justify the effort.

Of course the above table can be gradually extended or modified to meet peculiar conditions. But as it stands, we submit it as having served admirably in a type of cases most of which were hitherto unmanageable.

BOYISH APPETITE.—The relations between appetite and digestion is in general a fairly definite one. At the same time it must be allowed that this rule is largely modified by exceptions. Many persons are subject to morbid cravings to eat, which food cannot satisfy; and most of us know something of the appetite of idleness, of habit, or of nervous disturbance—the latter bearing a suggestive likeness to the desire for stimulants or the fragrant weed, taken to relieve mental depression. Apart from such considerations however, there are obvious variations in the degree of normal appetite in different individuals and at different periods of life. The man of sedentary habits cannot expect to compete with one who spends a life of movement out of doors. The man and the woman differ, so do the younger and the elder, and in a notable degree, the boy and the man. The vigorous appetite of boyhood is virtually a synonym of health. A rate of daily consumption which would in most men be gluttony is in young growing lads almost too common to attract notice. The explanation is not difficult when we take into account two chief conditions of existence at this age—the growth going on in every organ and tissue, and a very liberal allowance of active bodily exertion. Under the circumstances a sparing rule of diet would be unnatural and injurious. There is, of course, a limit even in childhood which it is trite to say is often and wrongly exceeded. There is no age, however, at which this form of excess is so pardonable. Whatever the surplus of food taken, most of the self-indulgent youngsters have been provided by nature with a power of disposal which may largely be re-

lied upon to correct its consequences. Measures of restriction are most wise when they are used to regulate rather the wholesomeness of food and the times of eating than the absolute quantity consumed. It is at a later stage that we may require to apply strictly the familiar rule that one should eat to live and not live to eat. A degree of apparent Philistinism in the matter of wholesome food and drink is in the young both usual and judicious.—*The Lancet*.

THE HUGHES CREMATORY.—The city of Savannah, Georgia, says *Science*, April 12, 1889, is soon to have a crematory for the destruction of garbage by fire. The model selected is that known as the Hughes Crematory, and is thus described by the *Savannah News*:

The crematory will be about 30 feet long, and from 15 to 20 feet wide. The main body of the kiln or furnace is a vertical shaft built of brick. At its base will be two hydrocarbon-burners. Upper and lower triangular flues extend across the middle of the shaft, and also an upper and lower set of baffles or side-wings, which are connected by means of wall passages or flues. Underneath these is a shelf, forming a retort in which air may mix with the flames from the burners. Flues are provided for the return of the gas arising from the incineration to a smoke-stack at the side of the shaft. A hydrocarbon burner is placed at the bottom of the shaft conveying the gases to the chimney, which deodorizes them before they pass out into the air. Perforated steam-pipes are located over the top drop-shelf of the shaft, connecting the burner with the

boiler, so that the fluids may be carried off.

The operation of the crematory is simple. When the furnace is brought to the required degree of heat, a load of the material to be burned is emptied into the top of the shaft. It falls on the first drop-shelf. After a suitable period this shelf is dropped, and the mass of material is allowed to fall on the second shelf, and a second is dumped into the kiln. After another interval the second drop-grate is allowed to fall, and the material is thrown upon the baffles and flues below, whence the residuum finally drops down into the ash-pit at the bottom of the shaft. The capacity of the crematory will be 50 tons of garbage per day, and the cost of the process is from 18 to 20 cents per ton.

In Montreal it costs just \$43,000 to destroy by fire a year's miscellaneous refuse, and \$8,000 additional for the burning of its night-soil. The destruction of the latter costs 75 cents per ton. In Minneapolis it is estimated that 15 to 20 cents per ton of refuse pays for the labor employed and the fuel used. Within five days recently the refuse cremated consisted of 33 horses, 59 hogs, 103 barrels of hotel and commission-house refuse, 12 loads of market offal, and 70 loads of manure. The aggregate weight was 200 tons, but the ashes deposited in the course of consumption weighed considerably less than 1,000 pounds. The total cost of labor and fuel for this five days' period was \$38.25.

SOMETHING FOR EVERYONE.—In these days of persistent office seeking—when there are many more applicants than there are offices to distribute—we are reminded that when Abra-

ham Lincoln was President he was taken ill, and the physician told him he had varioloid. "What is it?" he asked. "Varioloid," said the doctor. "Good enough," said Lincoln; "I've something now I can give everybody."

VICARAGE RENDERED UNHEALTHY BY ADJOINING GRAVEYARD.—For this fact I am indebted to the Rev. A. C. Downer, Vicar of Ilkley. It was communicated to him in a letter as follows: "I strove to serve three churches without even one curate, and when I was already nearly broken down with this,

unto the Lord; and that which he hath given will he pay him again." After looking around and repeating his text in a more emphatic manner, he added: "My beloved friends, you hear the terms of the *loan*, and now if you like the *security*, down with your *dust*." The result was, as might be expected, a very large collection.—*The Sanitarian*.

WASHINGTON'S MEDICAL HISTORY. General Washington was a man six feet two inches high; large-boned, vigorous, and, until the latter part of



infiltration from the church-yard into our cellars caused much and grievous illness amongst us; and the mischief proving incurable, we were finally driven out of our lovely vicarage altogether. I had for months been prostrate with low fever and ague."—*From Teale's Dangers to Health*.

CHARITY SERMON.—Dean Swift was once requested to preach a charity sermon, but was cautioned about having it too long. He replied that they should have nothing to fear on that score. He chose for his text: "He that hath pity on the poor, lendeth

his life, free from much physical ailment. He had the small-pox when a young man, and his face remained pitted. During Braddock's campaign in 1755, he had a fever, which Dr. Craik relieved by James' powders. After this campaign he suffered from repeated attacks of dysentery and fever. Washington was apparently not in vigorous health when he became President, and about this time of year, one hundred years ago, he was suffering from carbuncle, which for a time seriously threatened his life. He died finally, as is well known, from an affection of the throat.

FENCING AS A RECREATION.—Fencing is obtaining a strong foothold here, not so much because it is a polite accomplishment, ranking higher even than horsemanship, but because its advocates claim for it intrinsic superiority over all other recreations for men or women who live in a civilization that severely taxes the nervous organization. Intelligence, nerve and good temper are necessary in the fencer. Grace, strength and agility will follow practice. It is a sport that combines in a high degree, physical and mental exercise. Mere quickness does not count, for the swordsman is playing a game controlled by wit.

FRUIT FOR CHILDREN.—The most natural diet for the young, after the natural milk diet, is fruit and whole-meal bread, with milk and water for drink. The desire for this same mode of sustenance is often continued into after years, as if the resort to flesh were a forced and artificial feeding, which required long and persistent habit to establish its permanency as a part of the system of everyday life. How strongly this preference taste for fruit over animal food prevails is shown by the simple fact of the retention of these foods in the mouth. Fruit is retained to be tasted and relished. Animal food, to use a common phrase, is bolted. There is a natural desire to retain the delicious fruit for full mastication; there is no such desire, except in the trained gourmand, for the retention of animal substance.

TO CALCULATE THE CAPACITY OF CISTERNS.—*Rule.* Square the diameter of cylinder in inches, and multiply by 0.0408=gallons per foot.

STATE BOARD OF HEALTH
AND
VITAL STATISTICS,
OF THE
COMMONWEALTH OF PENNSYLVANIA.

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PLACE OF MEETING,

Supreme Court Room, State Capitol,
Harrisburg, unless otherwise ordered.

TIME OF MEETING,

Second Wednesday in May, July and Nov.

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(Until otherwise ordered).

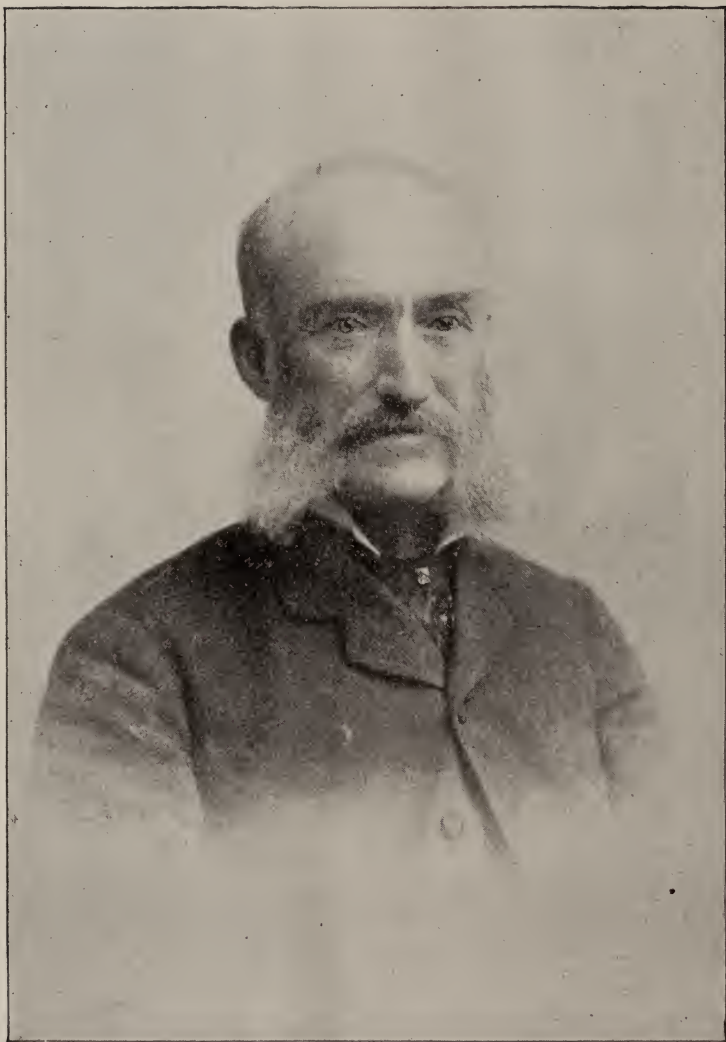
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Secretary's Address,
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*State Superintendent of Registration of
Vital Statistics.*
BENJAMIN LEE, M. D.



JACKSON PIPER, M. D.,
President of The State Board of Health of Maryland.

THE ANNALS OF HYGIENE.

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PHILADELPHIA, JULY 1, 1889.

No. 7.

COMMUNICATIONS.

THE SANITATION OF COUNTRY TOWNS AND FARM HOUSES.*

BY JACKSON PIPER, M. D.,

President of the State Board of Health of Maryland.

Ladies and Gentlemen, Sanitarians and Members of the State Board:—I am here this evening by invitation of the energetic and accomplished Secretary of the State Board of Health of this great Commonwealth to add my humble quota towards the advancement of Sanitary Science.

Unlike European countries, where reforms are fostered and maintained by the strong arm of government, we, in this republican land, must be influenced by the consent of the popular will. Consequently our efforts must be directed towards the education of the masses.

We cannot expect to effect any great results in sanitation unless public sentiment is with us. I hate to acknowledge this. In this matter I am something of an absolutest. I am sometimes strongly inclined to believe that conviction is apt to follow a heavy fine, that the apathetic, the ignorant, and the wilful cannot always be controlled by reason, that no individual in the community has a legal right, by

his own sweet will, to endanger the health and lives of others, and that what is good, should be made good by the strong arm of the law.

But I am admonished that these views are not tenable, by the presence of so many obsolete laws already on our statute books and by the bitter fight that local option is now waging on this line and meeting with alas! so many dismal failures.

The science of Sanitation is scarcely 30 years old and already great results have been obtained.

It is possible, however, that its theory is somewhat in advance of its practice. We have established our kingdom, but have not quite peopled it with willing subjects. We will have to work back a little—educate, persuade, temporize. There are always a few in every town, city and county to help us. Mr. Frank Hamilton, President of the State Business Men's Association of Michigan, in an address delivered at Traverse City, has concisely defined our position in the following words:—

We owe a debt to our State Board of Health for its efforts to enlighten the people upon matters conducive to health, happiness and longevity. Men who have risen above and are superior to their professions and occupations are the men who are the public benefactors of to-day. Physicians admitted into every home, see with trained vision, unknown to us, the polluted soil, the tainted water, the adulterated food, the lack of ven-

*The Annual address delivered before the State Board of Health of Pennsylvania at the Sanitary Convention held in Pittsburgh.

tilation and a host of dangers in our surroundings; they welcome anything which will stimulate men and women to properly care for their homes, which will arouse them to their responsibility for the preservation of the health not only of their own families, but of their neighbors, by the prevention of disease—disease caused more frequently by subtle germs than by open and visible agents. Whatever advantage nature has accorded in the site of our dwelling places, man by his ignorance or indifference may soon destroy; therefore it behooves one to guard well the gifts held within his grasp, and to check the tendency towards pollution, by educating the ignorant and arousing the indifferent. The personal and public responsibility of each citizen is of the greatest significance. The official guardians of health, the physicians, the boards of health, the students of sanitary science, may pour upon us their vast stores of knowledge, they may convene, resolve, agitate and discuss, but without the hearty response and coöperation of the citizen their efforts will prove of little worth in raising the standard of health and the value of human life.

In what way are we to instill this knowledge and increase and strengthen our hold upon the public? Let the principles of Sanitary Science and of Hygiene be taught in our public and private schools. See that our legislatures are composed of men having sympathy with and knowing something about the laws of health. Preach the gospel of cleanliness amongst men, women and children,—amongst mechanics, farmers, merchants, divines and physicians. Let the wealthy, by charitable bequests, endow chairs of Hygiene in our colleges. Obtain the active coöperation of the ladies. They are by nature sanitarians. They hate dirt! If it were not for the thorough cleansing they give our houses from cellar to attic twice a year, there would be much more sickness. They destroy more micro-organisms in one year than we men do in a hundred. If they

would only not crowd their windows and doorways with so many heavy curtains, they would be perfect. But flies and sunshine are destructive to furniture and this is a strong argument in the female mind against a more *enlightened* method of treating so *dark* a subject.

Let the medical and secular press give us hearty and active support. Look at the critique made by a distinguished editor of a medical journal published in Baltimore on a late meeting of the State Board of Health of Maryland.

“The State Board of Health held its quarterly meeting last Tuesday. The old questions of drinking water and sewage were discussed.” This was all; nothing more. Three lines of printed matter, only three lines! And yet the Board thought it *was* an important meeting.

The following subjects were discussed and in part acted on. A committee was appointed to examine into our food supplies and to ascertain the presence of tuberculosis and pleuro-pneumonia in our cattle, with a view to prevent the sale of diseased meats in our markets; the coöperation of all State Boards of Health with railway and steamboat companies for the safe and secure transportation of bodies infected with contagious diseases, and new methods of sewage disposal now in use in Europe.

In the same edition of the said journal more than a page of editorial matter is devoted to Souchon's *remarkable* method of drilling holes through the cranium and inserting into the brain hypodermic needles to *prospect* for foreign growths and hæmorrhagic effusions! If any scientist in this assembly would devise a plan for applying electrodes to these holes and galva-

nize into active working life, the sanitary sense of all recalcitrant editors he would deserve well of the State.

But the press, both civil and professional, I am glad to say, render us important and valuable aid. The medical profession has ever been with us, except possibly a few who fancy that sanitary methods must injure their means of support.

But the prevention of preventable diseases increases population and there will be so many the more to practice on at the *longer end* of life.

For the successful sanitation of our country towns it is essential that we secure intelligent and liberal minded men in the boards of county commissioners. But we do not secure them,—they *secure* us. And just here comes in the most difficult problem to sanitary success.

We have discovered ready means for destroying microbes, bacilli and micrococci, but no antidote has yet been found for that dangerous micro-organism politics. They are pestiferous spirilla with never dying spores.

What a field for their destruction is here opened to the Bacteriologist! If he could discover a germicide for these fungi how speedily sanitation would progress. But it would have to be a *germicide* for the Germans and an *irishcide* for the Irish, as the average American voter is made up of six of one and half a dozen of the other.

Having secured our legislatures, our county boards and the popular sympathy, our next move would be to get an intelligent, firm and fearless sanitary officer. A dozen chances to one that the youngest and most inexperienced physician in the town secures the position. Why? because as he has little to lose and much to gain, he would ac-

cept the place at a salary that would ruin an older practitioner. It is a dangerous position, that of sanitary officer. It is worth a man's meat and bread, *if he does his duty*, and no responsible man can afford to sacrifice these for the paltry salaries offered. Just here, I am afraid the wily politician may impugn my motives, not being altogether unselfish. Candor confesses that while the theory of sanitation is beautiful its practice is abominable. You are very liable to be regarded by very many as no better than a police officer, and a poor one at that, and police officers can be had *cheap*.

Having obtained our workmen and our laws how shall we proceed in our country towns and country residences.

Impure water, pollution of rivers and streams, sewage, cess-pools, foul water closets, pig-pens, henneries, stables, manure heaps, unclean cellars, damp houses, swamps and stagnant pools, decaying vegetation, slaughter houses, tanneries and cemeteries—these are the Hydra headed monsters that rend earth, air and water and like Pandora's box, let loose upon us most of the ills that flesh is heir to.

While Ulysses slept his curious crew unloosed the mysterious bag that held the unruly winds and misfortunes followed. The helmsman that steers the good ship Hygeia must be ever on the alert,—ever watchful, or else the foul winds of pestilence will drive her to destruction.

I have read with much interest the two excellent reports issued by your State Board, and I find a similar condition of affairs existing in your State as in mine.

Many of the towns in the thirteen original states are old, and their very soil is so polluted by the sewage deposit

of years that it is questionable if any system of sanitation can restore it to its pristine purity. The Maryland State Board of Health, last summer, ordered a competent chemist to make twenty-seven quantitative analyses of the well waters of nine towns.

Every specimen examined proved to be polluted by animal and vegetable excreta, and in consequence unfit for use.

Seemingly fair to the eye and to the taste, they have proven to some and will prove to others, as fatal as the poisonous waters of the Stygian Lake. The shades of the dead drank a draught of the waters of Lethes, when entering on the joys of Elysium, and ceased to remember the troubles and sorrows of life. And so apathetic and oblivious is the average villager to the insanitary condition of things around him, that it might be inferred a draught of his well water had had a like effect upon him, were it not for the fact that he is oftentimes rudely awakened from his lethean slumber by some valued and beloved member of the community being *intensely* hastened into eternity.

It is no argument to say that because you or I or our families escape sickness, after a prolonged use of such waters, that they are therefore innocuous. Brouardel says: "The reception of the morbid influence is personal to each one depending upon age, the conditions of previous or actual health, etc. The dose, so to speak of the virus introduced or inoculated, has also an influence on the morbid manifestations which result from its absorption. Again, some of the morbid agents live in water a certain time, then disappear, and their activity and virulence vary with the age of the

colony, There are various other circumstances, moreover, which will afford immunity more or less complete and prolonged."

So far as the water is concerned, the danger of using it can be overcome by the construction of artesian wells and from natural flow, but this does not meet the difficulty in the ground air which comes to us freighted with poisonous germs from sewage soakage. The box system with instant removal of excretal matter, our stables laid in thick plank to catch the fluid dejections and convey them to water tight barrels, to be carted to a distance—the manure to be stored in sheds protected from the rain, kitchen slops either collected in buckets or allowed to filter through properly constructed disinfecting barrels, well walls laid in thick Portland cement, or in bricks steeped in a boiling solution of equal parts of asphalt and tar, said bricks set by means of a pair of tongs, are some of the means to be employed. I saw a statement sometime ago that a chemist in England had discovered that iron plates suspended in polluted water purified it by oxidation. This fact was established by careful analysis. A practical use could be made of this by constructing the walls of wells and cisterns of circularly made iron plates. These plates could be made at some of our foundries and might possibly open up a new industry to some enterprising firm. Boiling the water has the effect of destroying the dangerous properties of putrescent matters and the use of filters would deprive the water of noxious elements.

I am aware that the majority of filters are the worst sort of culture beds for zymotic germs.

Dr. Plagge, of Berlin, has shown that the results of Bischoff's spongy iron method were disappointing and carbon filters proved worthless. Filters of compressed cellulose were unsatisfactory. The earthen-ware filters on Pasteur's principle gave in nearly every instance a filtrate practically free from germs.

Asbestos filters gave an apparently free filtrate but developed germs later on. His experiments point to the desirability of using filtered water soon after it is filtered.

Dr. C. W. Chancellor, Secretary of our State Board, recently returned from Europe, made us the following interesting and important report in relation to water pollutions, and how Europe was now treating the subject, and also some new methods of treating town sewage.

He said that every precaution would have to be taken against impure water, so long as the water is not filtered at the pumping-house or before it is delivered in the mains, as is done in London and all the chief European cities. Continuing, Dr. Chancellor said: "Water ought to reach houses perfectly fit for drinking, but if one may rely on the smell of our drinking water at certain seasons, it is far from being at all times free from noxious matters even when it leaves the reservoirs, and the community has to submit for a short time every summer to this domestic abomination; and thus it will be until the supply is filtered at the pumping-house or before it is delivered in the mains, as is the case with the water supply of London and nearly every European city. The water supply of Antwerp, drawn from a filthy river, is filtered through beds of spongy iron and black oxide of

manganese before being delivered to customers, and the result of more than two years constant running has to a great extent confirmed the expectations formed respecting the spongy iron filtration. The water has not varied in brightness or quality, and the filtering beds seem to be nearly unaltered. Under the circumstances attending our present water supply in Baltimore, every house would do well not only to boil the water used for dietetic purposes, but also to set up a good filter, and, what is perhaps of even greater importance, to take care that it continues to be a good one. It is a very common and a very dangerous assumption that 'a filter is a filter,' and once set up may be relied on for an indefinite period. Another delusion is the so-called 'self-cleaning filter.' It is much better not to filter water at all than to believe in such precepts. There can be no hesitation in assuming that the result of the purification must be in a ratio to the care bestowed on the filter. The material in domestic filters should be readily accessible in all their parts for cleaning and renewing, more especially if vegetable or animal charcoal is used; for although this material may prove satisfactory for a short time as a chemical purifier of water, both chemists and biologists are agreed that its use in the purification of drinking water is attended with much risk; and since the progress of science has revealed the deadly action of living zymotic poisons which occur in contaminated waters, another and a much more serious danger, through the use of charcoal, has shown itself. The commissioners 'On Rivers Pollution,' of England, have thus expressed their views: 'The property which char-

coal possesses in a high degree, of favoring the growth of the low forms of organic life, is a serious drawback to its use as a filtering medium for potable water.' From what has been said, it is quite evident that no *organic* substance can be employed with safety as a filtering material, and, therefore, the discovery and production of a perfect mineral filtering material is a matter of great sanitary importance. The material which presents the largest surface for the occlusion of oxygen in the smallest cubical space, is the most powerful purifier and filterer, provided it is composed of the proper substance. Spongy platinum fulfills these conditions best, and is consequently the most powerful purifier and filterer, and the best insoluble oxidizer known. Its enormous price, however, shuts it altogether out from practical use, and spongy iron has been used in its stead. But a better and cheaper filtering material than spongy iron has very recently been produced in England, and is now being used in that country on a large scale for both public and private filters. This substance, which is known as 'magnetic ferrous carbide,' is absolutely and entirely free from contamination with animal or vegetable matter, and contains no poisonous metals. The admixture of this substance with sand or gravel forms a filtering medium which purifies itself by deodorizing and disinfecting organic impurities, which would otherwise contaminate such beds. The process of combustion is constantly going on in the pores of the material, and the products of that combustion are tasteless, odorless, colorless and perfectly wholesome, creating carbonic acid, with which the water becomes charged to a

limited extent, rendering it sparkling as well as palatable and wholesome in the highest degree. Polluted water taken from the river Thames, below London bridge, was passed through a filter composed of this material, and on being then analyzed was found to be purer than any of the drinking waters supplied by the London water companies."

A NEW TREATMENT OF TOWN SEWAGE.

"For some time I had been watching with interest the developments of a new system of treating town sewage in England, and in my recent visit to that country I was shown the whole process at Acton, a town of thirty thousand inhabitants. The method is quite simple, and comparatively inexpensive, except in so far as the plant and the laying of the necessary transportation pipes are concerned. It consists in effecting rapid precipitation of the solids and deodorization of the supernatant liquids, and in the removal of the organic matter in solution by passing the effluent fluid through specially constructed filter beds.

"The precipitant and deodorant is known as 'ferozone,' and the filtrant at 'polarite.'" The evidence of numerous well-qualified authorities goes to show the importance of this method of treating sewage matter, both from an economical and sanitary point of view. The effluent produced at the Acton works is the purest, and the sludge the least in bulk and best in quality yet produced.

"The precipitant (ferozone) flows with the raw sewage into a large precipitating tank of 130,000 gallons capacity. Of these there are three side by side. Subsidence is allowed to take place for a period of from one to

three hours, after which the top liquid is run off from the surface by means of a floating arm direct on the top of the filter-bed, which is made up of sand as a top layer, then a layer of the filtrant, the bottom being made up of gravel. The resulting filtered effluent is bright, clear and free from any objectionable smell. These filter beds have been in use more than twelve months, and the only cleansing found to be necessary is the removal of the surface layer (one or two inches) of the sand. The sludge precipitated is of considerable value as a fertilizer, since the use of lime, which is so objectionable and causes the loss of ammonia, is entirely avoided. By the use of the filtrant (polarite) in properly arranged beds it is unnecessary to acquire large areas of land for irrigation. These beds never require changing, a slight rest of a few hours occasionally being all that is needed to effect revivification, coupled with a flushing or cleaning of the top sand. The beds will filter sewage effluents at the rate of 1,000 gallons per square yard per 24 hours, with better results than can be obtained by land filtration at the rate of $1\frac{1}{2}$ gallons per 24 hours; or, in other words, one acre of filtering area, containing a layer of polarite and sand, mixed in equal proportions, will do more efficient work than 666 acres of land."

Is it possible in our large towns, villages and private residences to do away with the abominable common earth closets and defective trap system of water closets and substitute a safe, cheap and efficacious method—one that will meet the requirements of a segregation of houses equally well as of a single house. I have lately examined into and seen the practical working of

an apparatus, much improved since patented, invented by Dr. Chancellor. I feel confident that this apparatus will meet the great want of the age—the proper disposal of excretal matter. I shall not attempt its description here.

I shall only briefly refer to its advantages:—

ADVANTAGES OF THE SYSTEM.

First. It affords absolute protection against the dangers which ordinarily arise from the decomposition of excretal matters and the refuse waters of the house.

Second. The apparatus being both water-tight and air-tight, the surrounding soil and adjacent waters are protected against any contamination by foul matters; at the same time, the dejections being excluded from exposure to atmospheric air, there is no fear of malodorous or unhealthy emanations.

Third. The soil pipe being hermetically closed at its lower extremity, there is no circulation of air through it to carry the gases, should any exist, into the house, and consequently no necessity for trapping the soil-pipe or for extending it above the roof. The tendency of any gas which might be disengaged from excrementitious matters adherent to the inner side of the soil-pipe will be, with each flushing process from the closet bowl, downward, and being thus carried to the bottom of the eservoir, they are absorbed by the water contained therein.

Fourth. While this system provides a means of getting rid of excrementitious and other household refuse in a manner to satisfy the sanitary requirements of the question, it at the same time preserves them for ultimate disposal in a manner to satisfy the re-

quirements from an agricultural point of view.

Fifth. In applying the system, the existing closet arrangements can remain as they are; and for kitchen slops, it is only required to join the sink of the kitchen and pantry with the fall-pipe from the closet, or directly with the reservoir.

Sixth. The excretal and refuse household waters, by a process of mechanical and chemical filtration, are deprived of all noxious substances, whatever they may be, in a manner to render them practically pure, and they may then be discharged into the public highways or sewers, or water courses not used for dietetic purposes, without danger of creating any offence whatever.

Seventh. The system secures to communities, large or small, a safe, cheap and effective sewerage for both household and manufacturing wastes, discharging them in a manner in which they can neither pollute air, nor soil, nor public water courses.

Eighth. Its crowning characteristics are simplicity of construction and permanence of action, with the least original outlay at which these qualities can be obtained.

FARMERS, HOUSES UNHEALTHY AND WHY?

In a lecture before the New York Academy of Anthropology, Dr. Lucy Hall, of Brooklyn, attributed the bad health of country people to the unsanitary condition of their homes. The vine-clad, shade-embowered country houses sung of by the poets and sketched by artists are really, says Dr. Hall, the most unhygienic in existence, being far less healthy than the average city houses. The typical country house she describes as surrounded with dense shade trees, producing gloom and mould. The best parlor is always shut up closely to prevent the carpet from being faded by sunshine and the furniture from being specked by flies. As for the bedrooms, they are often on the ground

floor over a damp cellar, and are ill-ventilated. The room occupied by the father, mother and small children as a sleeping apartment seldom has more than one window, and that is stuffy with curtains, shades, &c., whose only good office is to obstruct somewhat the ingress of odors and disease germs from the pile of kitchen garbage near by. Data collected by the lecturer with respect to 165 houses in New England, the Middle and the Western States show that the conditions of health are more disregarded by the farmers of New England than by those of the other sections. The sleeping apartments of all the New England houses, for example, were on the ground floor, while in the Western States the percentage was but 84 per cent. The percentage of "shut-up parlors" was for New England 85 per cent., for the Middle States 68 per cent. and for the Western States 60 per cent. In damp or wet cellars the Middle States led with 93 per cent., the Western States followed with 80 per cent. and New England closed the line with 60 per cent. Shade about the house was excessive in the West and New England and at the minimum in the Middle States. Of the New England farmers' houses 18 per cent. had wells in them, and the average distance of the well from the barn in that section was but 46 feet. The Middle and Western States had much better arrangements in this respect. They used better judgment also as respects the location of cess-pools. The distance of the cess-pools from the well averaged 29 feet in New England, 33 feet in the Middle States and 66 feet in the West. One-half of the New England farmers' houses have barns joined to them, and the same proportion have cess-pools joined to them. Slops were thrown from the back door of 77 per cent. of the New England houses, from 40 per cent. of the houses of the Middle States and from 26 per cent. of the houses of the Western States. The families occupying these houses complain frequently of sickness. Some member is always ailing, but the idea seldom occurs to anybody that the doctor's bills could be saved by some attention to the construction and surroundings of the house. Of the diseases found to exist in these dwellings rheumatism was, upon the whole, the most prevalent. Next after rheumatism came diseases of the lungs, then diphtheria, ty-



HENRY B. BAKER, M. D.,
Secretary of The State Board of Health of Michigan.

phoid fever and bowel troubles. Lung troubles, typhoid fever and diphtheria are specially abundant in New England, as was to be expected from the facts recited above. It is in the Middle and Western States that rheumatism most abounds. But besides these diseases, there are frequent cases of kidney trouble, nervous debility, melancholia, throat affections, &c. The remedy is to build up country houses with large and sunny rooms, with shade trees at a due distance; to have the well safe from the drainage of cess-pools and stables; to put all outbuildings at a proper interval; to use only the rooms on the second floor as bedrooms; to cement the cellar and extend it under the entire house, and not to use it as a receptacle for vegetables, meats and other perishable matters, and to use temporary awnings instead of permanent projecting porches. The average woman has a mania to keep out sunlight. She is to be withstood, and windows are to be used for the purpose for which they were originally constructed. Above all, if it is desired to improve existing country dwellings, it is necessary to demolish contiguous barns, pig-sties, henneries, and other like offensive outbuildings. To advance such improvements, according to Dr. Hall, is the duty, if not the interest, of the country doctor, who, when properly educated, cannot but be aware of the insanitary condition of his patients' homes. It was suggested by a sagacious anthropologist, at the conclusion of the lecture, that the duty of educating the country people in sanitation rests on the pulpit and the press as much as the doctors. This is, no doubt, the fact. Every one that understands the ruinous results of living, or trying to live, with insanitary surroundings should join in the work of reform.

In conclusion, thanking you for your kind attention to this my feeble effort, imperfectly rendered, I will take the liberty of giving you all a *prescription* for

HOW SHE CAN BE TOLD.

How can I tell her?
By her cellar,
Cleanly shelves and whitened walls.
I can guess her
By her dresser;
By the back staircase and hall.

And with pleasure
Take her measure
By the way she keeps her brooms.
Or the peeping
At the keeping
Of her back and unseen rooms.
By her kitchen's air of neatness,
And its general completeness,
Where in cleanliness and sweetness
The rose of order blooms.

A PLEA FOR PUBLIC HEALTH IN VILLAGES.*

BY HENRY B. BAKER, M.D.,
Secretary Michigan State Board of Health.

When a fire breaks out in a village every person considers it a duty to give a general alarm and, especially prompt notice of it to the fire department: and all citizens co-operate for the speedy extinction of the fire. If this were not done the *property* in the village would be quite generally endangered by the possible spread of the fire. Why is it that when a dangerous communicable disease breaks out, one which may spread and endanger quite generally the *lives* of persons in the village, there is so frequently no such general alarm and prompt notice to a well-organized department of the village government, and no general coöperation for the extinction of the disease? Is not a person's life of more consequence than his property? Is not the saving of the *lives* of their children of as much consequence to the inhabitants of the village as the saving of their *property*? If each person were forced to answer this question, relative to his own children, I believe that he would feel like a degraded miserly wretch if he did not promptly sacrifice his property in de-

* Read before the State Sanitary Convention in Pittsburgh.

fence of the life of his child. Yet, collectively, the citizens generally do *not* do for the protection of *life* what they do for the protection of *property*—they do not maintain a well-organized health department so generally as they do a well-organized fire department. I believe it is because they do not so generally know that lives may be saved by well organized health departments, or because they do not know the value of human life to the community.

It is the purpose of this paper to point out some of the ways in which lives may certainly be saved by a good health department, and to indicate something of the money value of human life; for, notwithstanding a general repugnance of people to weigh the life of fellow beings, and to estimate their value in dollars and cents, yet, in some way, it is important that people generally shall come to see that public-health work in villages will “pay” in dollars and cents, as well as in the consciousness that the lives of loved ones are saved.

In order to be somewhat precise in our study of this subject, let us fix upon the size of the village which we will especially study; and, in order to have the figures in “round numbers” let us study especially the average village having about twenty-five hundred inhabitants. If we consider the usual death-rate from all causes to be about seventeen in each thousand inhabitants each year,* there will be, in our average village, forty-three deaths, in each year. Then, about three of these deaths will have been caused by diphtheria, about one death will have been caused by scarlet fever, and about one from typhoid fever.† In any one par-

ticular village these diseases may not occur in every year, but in the average village they will occur; and in a longer series of years the deaths from these diseases in each and all of the villages of this size will average rather more than the figures I have just mentioned.

I have selected these three diseases (diphtheria, scarlet fever and typhoid fever) because these are the most common dangerous communicable diseases, and because they are diseases which we know how to prevent; and we know how to restrict them after they have been introduced into a community. On this point, as I am more familiar with the evidence collected in my own State than with that collected by your State Board of Health in Pennsylvania, I will present to you a few facts collected in Michigan:—

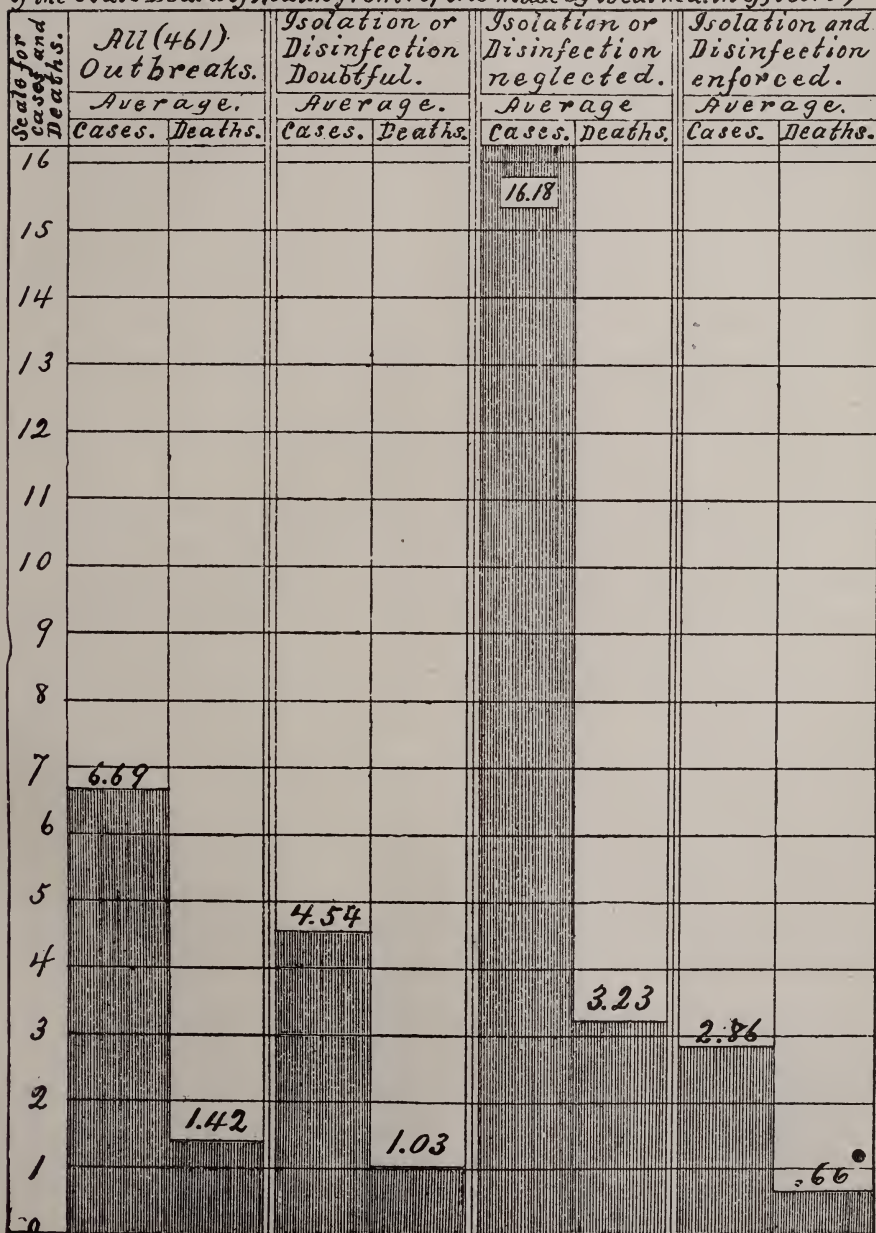
DIPHTHERIA.

In 1886, 464 outbreaks of diphtheria were reported to the office of the Michigan State Board of Health, and the health officers were requested to report just what was done to restrict the disease, and how many cases and deaths occurred in each outbreak. From these reports it is possible to see under what conditions the most cases occur. The results of this inquiry are graphically exhibited in a diagram, copies of which are here for distribution to each of you who may be interested. In this diagram, by comparing the last two columns with the two immediately preceding, it will be seen that in those outbreaks in which the isolation of infected persons and things, or their thorough disinfection, after death or recovery, was neglected there were about five times as many cases and five times as many deaths as there

* Foot note on page 330.

† Foot notes on page 331.

Diphtheria in Michigan in 1886, exhibiting the Average Numbers of Cases and Deaths per outbreak:— (1) in All the 461 outbreaks Reported, (2) in the 243 outbreaks in which it is Doubtful whether or not Disinfection or Isolation were secured, (3) in the 102 outbreaks in which Isolation or Disinfection or both were neglected, and (4) in the 116 outbreaks in which Isolation and Disinfection were both enforced. (Compiled in the office of the Secretary of the State Board of Health from reports made by local health officers.)



were in those outbreaks in which both isolation and disinfection were enforced. This is equivalent to saying that by complete isolation of those sick with diphtheria, and the thorough disinfection of all infected persons and things, at least four-fifths, in other words eighty per cent, of the cases of diphtheria and of the deaths from that disease have been prevented,—by restricting the disease, after it has been introduced into the localities. Similar facts were shown by the statistics for the year 1887, and by those for 1888, although the average cases and deaths in Michigan during these two later years were somewhat less than in 1886, in those outbreaks in which either isolation or disinfection was neglected. For the year 1888 we compiled the reports so as to show the results when both isolation and disinfection were neglected; and it was shown as would be expected, that, compared with this, the saving by isolation and disinfection was greater than eighty per cent of the cases. The average of the three year's experience shows a saving of over seventy-seven per cent. of the deaths.

It is proved, then, that if we employ the measures with which we are familiar, and which are described by three words—isolation and disinfection—we can prevent say seventy-five per cent. of the deaths which otherwise will occur from diphtheria.

SCARLET FEVER.

Similar reliable statistics, collected by the Michigan State Board of Health, have proved that, after the disease is introduced, eighty per cent. of the deaths which otherwise would occur from scarlet fever, can be prevented by thorough isolation and disinfection of

all infected persons and things. Copies of a diagram exhibiting facts relative to scarlet fever in Michigan during the year 1886, are here for distribution.

TYPHOID FEVER.

Such absolute proof of the accomplishment of the restriction of typhoid fever as I have given you relative to diphtheria and scarlet fever, I have not here to present to you; but theoretically, typhoid fever is more easily restricted and prevented than is either diphtheria or scarlet fever; because it is not usually spread directly from person to person; and it may be restricted by the thorough disinfection of everything that comes from the patient; and it may be in great part prevented by drinking no water excepting that which has been sterilized by having been boiled.

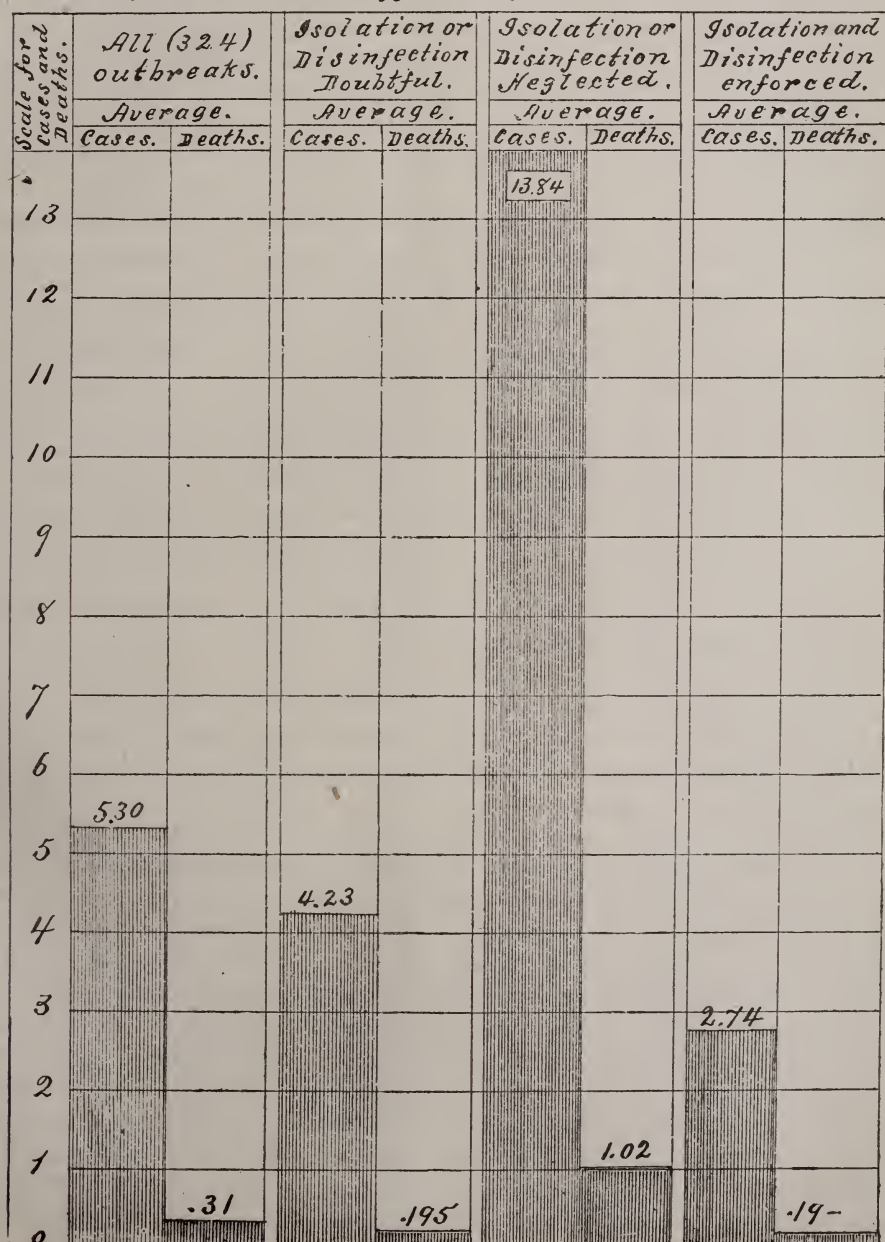
It has been said that for every death from typhoid fever some person should be held criminally responsible. This implies that the disease is preventable and that it is the duty of every person to know how it may be prevented.

In common with other State Boards of Health, the Pennsylvania State Board issues copies of a pamphlet (Circular No. 18) giving brief directions how to restrict typhoid fever. By complying with its directions, at least eighty per cent. of the cases and of the deaths which otherwise will occur from that disease may probably be prevented.

If we save seventy-five per cent. of the sickness and seventy-five per cent. of the deaths from diphtheria, scarlet fever and typhoid fever, what does this amount to in the average village or borough of twenty-five hundred inhabitants? Let us see.

We have seen that the average vil-

Scarlet fever in Michigan in 1886: The Average Numbers of Cases and Deaths per outbreak:—1, in all the 324 outbreaks reported; 2, in the 221 outbreaks in which it is doubtful whether or not Disinfection or Isolation were secured; 3, in the 45 outbreaks in which Isolation or Disinfection or both were neglected; and 4, in the 58 outbreaks in which Isolation and Disinfection were both enforced. (Compiled in the office of the Secretary of the State Board of Health from reports made by local health officers.)



lage of that size has in each year, on the average, about three deaths from diphtheria, one from scarlet fever, and one from typhoid fever. From the two last-mentioned diseases the average is rather more than one death, so that seventy-five per cent. of the deaths would amount to about one death from each disease each year. Seventy-five per cent. of the deaths from diphtheria would equal two deaths annually. From the three diseases, then, four lives would be saved. The three saved from diphtheria and scarlet fever will be under ten years of age, and the person saved from death by typhoid fever will be in the middle age—in the “prime of life.”

When lives of young or middle-aged persons are lost to a community something else is lost, namely, their prospective earnings,—the wealth which otherwise they would have created. There are several ways of estimating the extent of this loss:—A few years ago a good negro slave was valued, for what he would earn in excess of the cost of his keeping, at about eight hundred dollars; statisticians usually value a person in the prime of life as worth to the community about one thousand dollars. Children are worth as much less as it will cost to raise them to the most productive age. If the three children which may easily be saved in the average village are estimated as worth half the full average value of a person, than if their lives are saved there is a saving of fifteen hundred dollars; and if the one adult life is saved from typhoid fever, there is a saving of a thousand dollars—and, from the three deaths prevented, a saving of twenty-five hundred dollars—a dollar for each inhabitant of the village.

Facts, which I consider incontrover-

tible, prove beyond reasonable doubt that in the average village or borough of twenty-five hundred inhabitants in Pennsylvania, this average annual saving of lives and of money value may easily be accomplished, with reference only to the three diseases I have mentioned; leaving out of the account all saving of sickness, and all saving from deaths which may occur from other diseases. Surely the saving of these lives is well worth the effort of your people. The exact methods of work may be stated further on, but it will require the general coöperation of the citizens of the village; it cannot be done except by *organized* coöperation. In other words, it will require an efficient local health officer; and then the citizens must coöperate with the health department of the village as promptly and as thoroughly as they now do with the fire department. It will require such a public opinion as will hold the health officer steadfastly to his duties, and such as will pay him so well for his services that he can afford to do his best for the *prevention* of disease, leaving to other physicians the care of those already sick. To do this requires money,—money by the hundreds, perhaps by the thousands of dollars, every year. But I have proved that, by such work as can be done by, and in connection with an efficient local health officer, with reference to three diseases alone, there can easily be saved in each average year, lives which at ordinary estimates would add to the wealth of the community at least twenty-five hundred dollars. If, then, our average village shall expend twenty-five hundred dollars a year in public health work, it will only be paying to the health officer and a few others, as much as without such payments is ac-

tually lost to the people of the place. Is it not better to pay this money for public-health service, than to bury that of as much actual money value in the grave yard?

We will admit, if you please, that when deaths occur, the loss is not equally distributed among the people of the village; generally the loss falls most heavily upon the bereaved family; and this is especially true if the death is of the bread winner of the family. But it should not require much argument to show that the prosperity of a village depends greatly upon its healthfulness and the safety of life therein, and that, in a long series of years, the deaths are distributed somewhat equally among the people, and that, even if they were not equally distributed, a high moral sentiment should prompt us to guard the common safety of life among us. It was recognized even before the Declaration of Independence, that to each citizen the right to exist,—the life of the individual is among the unalienable rights to secure which “governments are instituted among men.” It is plain, therefore, that one of the highest, perhaps the very highest function of a government is to guard the lives of the people.

Having reference, then, to only three of the most important communicable diseases, it seems plain that the average village has the undoubted right, and can well afford to expend, in every year, two thousand five hundred dollars for the restriction and prevention of diphtheria, scarlet fever and typhoid fever. And I think there is good reason to believe that the citizens of the average village would make money by so doing; because the village would incidentally save lives and cases

of sickness from other diseases than those I have mentioned; and, besides, in my account of losses by those three diseases, I accounted only for the losses by reason of the deaths, leaving out of the account all the great expenses incident to the sickness.

WHAT IS THE EXACT NATURE OF THE WORK TO BE DONE?—I would not have the health officer, or the board of health neglect any duty which is now required by law or custom. Nuisances should be abated; even if there is no absolute certainty as to just how they may cause sickness. House-to-house inspections by the health officer may well be maintained at regular intervals. Such inspections yield knowledge useful by the health officer in some of his duties, as, for instance, those for the prevention of typhoid fever. But none of these things, which it has so long been considered the sole duty of the health officer to attend to, have much to do with the restriction or prevention of scarlet fever, and probably not with diphtheria. For that work entirely new methods must be employed. To do this work, the health officer, and the people who co-operate with him, must have a good theoretical and practical knowledge of the “germ theory of disease.” They must know that the “germs”—the contagium of some of the dangerous diseases, cannot, so far as we now know, be reproduced outside the body of man or of some animal. A few years ago it was generally believed that all we had to do to protect ourselves from all the dangerous diseases was to clean up and keep clean; it was thought that these diseases were all reproduced in filth. Now we know that this is not true; that while typhoid fever probably is reproduced

in filth, outside the body, or, if its specific cause is not reproduced, certainly it is stored in the filth outside the body, and all ordinary measures of cleanliness are important for the prevention of that disease, it is not true that all diseases are thus caused, or that anything worthy of mention can be done for the prevention of some of the most dangerous of them by attention to ordinary cleanliness. To show how strong the evidence on this subject is, I may mention that for several years there has been offered a prize of a thousand dollars to any person who shall demonstrate the possibility of reproducing, outside the animal body the vaccine virus or the modified virus of small pox, capable of preventing small-pox in the way well known to be accomplished by vaccine virus propagated in man or animals. No one has claimed the prize. It seems to be impossible to find or create any conditions outside the living body which will enable this contagium to reproduce. There is no reliable evidence that the contagium of scarlet fever is reproduced in filth outside the body. There is question whether the contagium of diphtheria can be re-produced outside the body, and still more question whether in ordinary life it is so re-produced. One of the things which makes it improbable that it is so re-produced is the fact proved by the statistics supplied by hundreds of health officers in Michigan, that simply by the isolation of infected persons and things, and their thorough disinfection, three-fourths of the cases and deaths from diphtheria which otherwise would occur are prevented. If the disease were generated in or by ordinary filth, it does not seem probable that isola-

tion and disinfection would be so very effectual for its restriction and prevention. But it has been abundantly proved, that any person or animal infected with the disease is extremely dangerous to all persons who are susceptible to the disease; that the contagium from any person, even if it cannot grow or multiply outside the body, yet can lie for months and years dormant but virulent to produce the disease whenever it is breathed in by a susceptible person; that this contagium clings to clothing, books, letters, papers, walls of rooms, curtains, and articles of furniture, and may thus reproduce the disease long after the recovery of the person in whose body the contagium was formed; that therefore, time alone cannot be relied upon to protect us from the contagium; that no ordinary cleanliness can protect us from it; that nothing is available for this purpose short of some gaseous disinfectant which will follow the contagium to the uttermost recesses of all cracks and crannies, and will then and there attack and destroy its life. The mode of disinfection which has proved effective for the prevention of scarlet fever and diphtheria in Michigan, is the exposure of all infected things to the fumes of burning sulphur; and the State Board of Health recommends that the fumes be as strong as will be made by the burning of three pounds of sulphur in a room ten feet square, or in each thousand cubic feet of air space. Discharges from the throat and mouth are to be taken on rags, and immediately burned. But for complete directions I must refer you to the pamphlets published by your own State Board of Health. (Circulars Nos. 19 and 21.)

It is important that we maintain a local health service, so that at a moment's notice, all the measures for the complete isolation of a person sick with one of these dangerous communicable diseases shall immediately be put in operation; that, at any time, the appropriate disinfectants, for use in the sick room and after the recovery or death of the patient, shall be ready, and shall be faithfully and intelligently used. It is important that every village have at all times, an efficient local health service, so that in case of need, it can have the benefit of the aid which can be rendered by the State Board of Health. A good health officer is powerless to protect a village unless he is supported by the people. In order that the people shall support him in strong measures for the restriction of infected persons and things, they must know wherein lies the danger, must appreciate the importance of restrictive measures, they must know how isolation and disinfection are accomplished, and how they may be made imperfect, and deaths result. This co-operation of the people, which is so important, can be had if they can be led to see the truth, and they can be led to see the truth, if it is presented to them in the right way at the right time. In an outbreak of scarlet fever, or diphtheria, if prompt notice be given to the local health officer, and by him to the State Board of Health, the local health officer can promptly be supplied with pamphlets which tell, in brief language, just how to restrict that particular disease; and if the health officer distributes these pamphlets to the *neighbors* of the family in which the disease is, they will then be likely to read and to pay attention to the best methods of preventing the spread

of the disease into their own families. They will be more ready to aid the health officer than they would be if left in ignorance of those best methods of restriction.

This may serve as a hint as to some of the ways in which an efficient local health service co-operating with the State Board of Health, and securing the co-operation of the neighbors of those sick with communicable disease, may act for the protection of life and health in the locality.

The State Board of Health publishes full and valuable instructions to those local health officers who are for the first time elected for that service. These instructions also serve as reminders to those health officers already familiar with the duties of the office, also to call attention to any new law which may have been passed by the legislature, or any new and useful fact which may have been learned from the compilation of the reports collected by the State Board of Health. Thus every locality that maintains an efficient health service which is actively in harmony with the State Board of Health, contributes to and has the benefit of the combined experience of all the other similar boards of health throughout the State, and in fact of all the experience of similar organizations throughout the world; because the State Board of Health is constantly exchanging reports of its work for the accounts of the work of other health officers and boards throughout the world. There is an old saying that "Dwarfs see far on Giants shoulders." This may serve to fix in our minds the fact that a very humble and ordinary person, acting as a local health officer in an ordinary village, may accomplish great results by life-

saving measures when he is lifted up and borne forward on the shoulders of all of mankind who are engaged in similar work, as he may be so aided if he puts himself in the way of such aid. In this work, the "Giant's are always in existence,—in many places throughout the world excellent public health work is constantly being done and reported; but I fear that it frequently happens that a village in Pennsylvania fails to provide even a "Dwarf" to act as a local health officer. I should be glad if each and

every village or borough in Pennsylvania would constantly employ the best physicians within its limits, to act as its sanitary advisor and health officer; one who would put himself on the shoulders of all the "Giants" in sanitary science and public-health work, in Pennsylvania and throughout the world; one who would be constantly employed for the prevention, and when required, for the restriction of disease; and one who would thus save to the people of his village not only as much in money value as is ex-

*DEATH RATE IN PENNSYLVANIA.—CITIES.

CITIES.	YEAR.	POPULATION.	DEATHS.	DEATHS REPORTED TO 1,000 INHABITANTS.
Reading	1886	52,250	861	16.4
"	1885	50,500	1,025	20.2
"	1884	49,000	917	18.7
"	1883	47,500	869	18.2
"	1882	45,750	890	19.4
Philadelphia	1887	989,431	21,719	21.9
"	1886	971,363	20,005	20.59
Pittsburg	1886	205,000	4,225	20.6
"	1885	195,000	3,840	19.7
"	1884	185,000	3,753	20.0
Scranton	1886	. . . . .	1,067	13.33
Erie	1886	33,215	569	17.1
"	1885	36,008	477	13.2
"	1880	27,730	490	17.7

14)257.02

The average death rate = 18.36 per thousand and inhabitants.

pended for public-health work, but also prevent a vast amount of pain, of sickness and of agony, and save the lives of children and other loved ones who without such public health work are constantly being torn from their parents, relatives and friends.

This is why I plead for the establishment, and for the permanent maintenance of an efficient public health service in every village. If there is as yet no law whereby every village, borough, or inhabited locality in Pennsylvania can maintain an efficient local health service, I earnestly hope

that your legislature will pass such a law, as soon as possible, and that, by governmental forms which they will respect and obey, the people of this great State may have guaranteed to them "Life, Liberty and the Pursuit of Happiness," which can be only through their protection and exemption from sickness and deaths from preventable causes.

The average death-rate in the city of Philadelphia for the fifteen years 1871-1885, is 21.87. $21.87 \times 15 = 328.05$. $328.05 \times 257.02 = 585.07$. $585.07 \div 29 = 20.18$. Thus the average

death rate for the above cities for the years as above, but Philadelphia for seventeen years instead of for two years=20.18.

The proportions which the deaths from certain dangerous communicable diseases are of the deaths from all causes in Pennsylvania are shown, for a single year, in the following table ; and a similar table shows the same for the State of Michigan ; but there is reason to believe that in a long series of years they would not be so large as

they were in the census year. The last table for Michigan, for a long series of years, is probably near the truth, for Pennsylvania as well as for Michigan.

Deaths reported, in the U. S. Census of 1880, as having occurred in Pennsylvania, during the census year, from Consumption, diphtheria, Scarlet Fever and Enteric Fever, and what the per cent of deaths from each, and from all of these four diseases is of the deaths from all causes.

ALL DEATHS.	SUM OF DEATHS FROM THE FOUR DISEASES.	CONSUMPTION.	DIPH- THERIA.	SCARLET FEVER.	ENTERIC FEVER.
63,881	17,451	8,069	5,481	2,241	1,660
Per cent. . . .	27.32	12.63	8.58	3.51	2.60

Deaths reported in the U. S. Census of 1880, as having occurred in Michigan, during the census year, from Consumption, Diphtheria, Scarlet

Fever and Enteric Fever, and what the per cent of Deaths from each, and from all of these diseases is of the deaths from all causes.

ALL DEATHS.	SUM OF DEATHS FROM THE FOUR DISEASES,	CONSUMPTION.	DIPH- THERIA.	SCARLET FEVER.	ENTERIC FEVER.
19,743	5,672	2,602	1,995	528	547
Per cent. . . .	28.73	13.18	10.10	2.67	2.77

The number of reported Deaths, from all causes, in Michigan during the thirteen years, 1874—86 ; also the numbers of reported Deaths from Consumption, Diphtheria, Scarlet Fever and Typhoid Fever during the same

period, and what the per cent of Deaths from each, and from all of these four diseases is of the Deaths from all causes.*

*Compiled from Registration Reports of Michigan

ALL DEATHS,	SUM OF DEATHS FROM THE FOUR DISEASES.	CONSUMPTION.	DIPH- THERIA.	SCARLET FEVER.	TYPHOID FEVER.
198,718	48,253	23,496	12,948	5,423	6,386
Per cent. . . .	24.3	11.8	6.5	2.7	3.2

By the above table it will be seen that 3.2 per cent of all the deaths have been from typhoid fever ; 2.7

per cent. from scarlet fever ; 6.5 per cent from diphtheria, and 11.8 per cent from consumption ; and that 24.3

per cent of all the deaths have been from these four diseases, which are now believed to be in great part preventable by measures which are practicable by intelligent people in connection with the services of an intelligent and efficient local health officer co-operating with a State Board of Health.

VENTILATION AND HEALTH*

BY M. B. GOFF, LL.D.,

Chancellor of the Western University of Pennsylvania.

It seems a little singular that at this late date in the history of the world men should be gathered to hear discussed the necessity that exists of surrounding those for whom they are bound to care with such safeguards as shall protect their most vital interests. This very subject in many of its aspects must have been discussed by nearly all the ancients, and especially by the Jews, to whom the Father of All gave such explicit directions as to the care they should take of their bodies, and the means they should employ to ward off the diseases that endangered their health and threatened their lives. We sometimes speak lightly of their numerous ablutions, and the care they took to "wash often", not only after performing such duties as preparing the dead for burial, but even after they had been "to the market." Yet when we come to examine the danger of contamination even in our market places, we begin to feel that perhaps we have judged too hastily. When we come to consider how readily the seeds of malignant disease cling to the skirts of those who come into close proximity to it, and the great danger there is of

carrying from the bed-room of the infected the germs that fasten themselves to our loved ones and hasten them to a premature grave, we may well hesitate to say aught against what has seemed to us so many unnecessary precautions. Nor were the Jews alone in matters of this nature. The Greeks and Romans, though not making Hygiene a part of their religious duties, were far from neglecting it. The Laws of Lycurgus, says Dr. Gairdner, are not wanting in very pointed enactments on Sanitary matters; and the importance attached by all the Greek republics, and in the Platonic ideal polity, to physical culture, is too well known to require remark. The Roman people, poor and apparently rude as it was in its origin, yet found time amidst its military occupations, to construct the "Cloaca Maxima," as an indestructible and stupendous memorial of its attention to the drainage and sewerage of the city at a very early period of its history. At a later period aqueducts were made to cover miles upon miles of the surrounding plain; and their splendid ruins, still partly used for their original purpose, attest the munificence and abundance with which the first of sanitary requisites was supplied to the imperial city. Moreover, we know enough of the construction of the private houses and public buildings of the Romans to see that they recognized the necessity for free ventilation and good drainage. It seems strange that we to-day should be urged to do what was so thoroughly and willingly done in the ages of the distant past. In the paper we propose to present we cannot hope to go into a full discussion of this all-important subject. If we shall succeed in offering a few motives that will prompt to

*Read before the Sanitary Convention, held at Pittsburgh, Pa., May 31 and June 1, 1889.

some action in the direction hinted at, it will be as much as we dare hope to accomplish.

In one way we moderns have at least made wonderful progress. When we grow ill, we know where to go for relief. Those who have devoted themselves to the noble art of healing, have to such an extent and with so much zeal and success, investigated the causes and cures of the diseases to which the human frame is subject, that nearly all the ailments have been traced to their origin, and many whose cure was regarded as doubtful, readily yield to the present enlightened methods of treatment. In this we are, I doubt not, very much in advance of past ages. We are better able, too, to use the medical preventives which have been discovered to ward off dangers of approaching disease. And it is a well-known truth that the average of human life as a result of this knowledge and practice, has been greatly prolonged. But why may we not live, as did Methusaleh and the other ancient worthies? Why should we herald to the world as something extraordinary, the fact that a certain man died at the age of 100 years? Why should we speak with such wonder of the fact that a father who had attained the age of 98 years had walked three miles in one day, and the next had mowed all day side by side with his middle-aged son? Is it not possible that these things should be the rule and not the exception? I do not suppose that this could come to pass in a few years; it would probably take centuries to bring about such a state of affairs. Yet it seems to me that it would take no great stretch of the imagination to see with the mind's eye the man of 90 taking the place of

young conductors on the railways, or handling the plow and harrow as do the men of 25 or 30 years. But of course this will not be until we have learned to obey better than we now do the behests of nature, and better follow some of her clearest promptings.

And now let us look for a moment and see if we can learn from Nature herself some of those things which are at least for our temporal good. There are many things which she gives us free of charge, and of these, two stand pre-eminent, air and water. The former abounds everywhere. Day and night, unless we shut it out, it is with us. Deprive us of it, and we die. From its abundance and its necessity, does it not seem as if it were made for constant use? So, too, with water. The springs flow from the hill and mountain; they form the rivulet; join together in the brook; pour their volume into the creek; rush forth the mighty rivers, that "flow on forever." Is it not also made for our constant use? so abundant that nothing but the perverseness of human nature and its determined resistance to all pertaining to its own good, can destroy the beneficial effects intended by the Creator.

The chemist tells us that our atmosphere is composed in the main of the two elements, oxygen and nitrogen, in the ratio of 21 parts of the former to 79 of the latter. But that in this air there are ordinarily certain impurities, such as carbonic acid gas, watery vapor, and various fine floating substances arising often from the materials upon which workmen in the neighborhood are engaged.

Our physiologists tell us that every year we perform seven million acts of breathing, inhaling one hundred thous-

and cubic feet of air and thus purifying over three thousand five hundred tons of blood. A wonderful work, indeed, to be accomplished by each human being without his being aware that he has done anything more than eat, sleep, and rest. We are, indeed, "fearfully and wonderfully made." But to accomplish all this what is necessary? A constant supply of fresh air. What pure air, as furnished us by Nature is, our scientists have also taken the trouble to discover, and their report is, that what we call pure air contains four parts in 10000 of a noxious gas, called carbonic acid gas; but that the diffusion is so great that the amount named may be taken into the lungs along with the nitrogen and oxygen without either discomfort or injury. But it is astonishing how little added to this quantity renders the air entirely unfit for use. Add two parts in ten thousand and we reach the limit of comfort and enjoyment; add two parts more, and we render the air burthensome to the lungs; two parts more, and we reach a point which is extremely dangerous.

Of what use is the air? Air is for the purification of the blood. Taken into the delicate air-cells of the lungs the oxygen is taken up by the blood; while at the same time the carbonic acid gas which has been collected by the blood in its passage through the body is given off as the breath. "The blood, purified and laden with the inspiring oxygen, goes bounding through the system, while the air exhaled carries off the impurities." The amount of this impurity is estimated as being six-tenths of a cubic foot per hour from each adult. Suppose a man be placed in an air-tight room containing just 10,000 feet of pure air (so-called).

Remembering that this ten thousand feet contains four feet of carbonic acid gas, it is plain that at the end of one hour it would contain 4.6 feet; at the end of two hours, 5.2 feet; at the end of three hours 5.8 feet; which is very nearly the limit for healthy breathing. At the end of four hours, 6.4 feet; and so on, till at the end of ten hours, the 10,000 feet of air would contain 10 cubic feet of the noxious gas, rendering it utterly unsafe for inspiration. Thus it would seem, that at the very least calculation, a man in order that he may keep up even a sickly existence must have ten thousand feet of pure air each ten hours, or on an average, 1000 feet per hour. In like manner, it can be shown, that to reach a purity of nine cubic feet out of 10,000 he must be supplied with 1200 cubic feet of fresh air each hour; a purity of eight to 10000 would require 1500 feet per hour; of seven to 10000, 2000 feet per hour; of six to 10000, 3000 feet per hour. This is on the supposition that a man breathe in the ordinary manner, making no special exertion of any kind. If, in addition, there was also a gas jet burning one foot of gas per hour, the estimate is, that this would equal in the vitiation of the air the breath of one man for the same space of time. So that where 1000 feet were used, 2000 would now be necessary; and in five hours the entire vitality of 10000 feet of pure air would be destroyed. Of course, if two jets of the capacity named were burning, an additional six-tenths of a foot of carbonic acid gas would be given out, and the vitality of the 10000 feet of air be destroyed in about $3\frac{1}{3}$ hours. And it is easy to estimate what would be the amount of vitiation in any particular case.

We have proceeded on the assumption that we can measure with precision and regulate with exactness the amount of air we can supply to a room or hall. In practice, we shall find several circumstances that affect the supply both as to quantity and quality; of which we shall speak later. One thing is evident: were rooms air-tight, the larger the room the better for the occupant; and the smaller, the worse.

If, however, means be employed to supply fresh air from time to time, no special harm can result in one's occupying comparatively small rooms. That, as a rule, by far too small a quantity of good air is supplied to those following in-door occupations, or who are confined on account of disease or injury, is quite evident from the reports collected by experts on this subject. The following is probably a very fair average of the number of cubic feet per hour allowed inmates of the places mentioned: Hospitals, 1200 cubic feet; middle class houses, 1000 cubic feet; barracks, 600; good secondary schools, 500; ordinary boarding schools, 130; workhouse dormitories, 300; lodging houses in London, 240; one roomed houses, 212. From which it is seen that a man living in a middle-class house, (where there are no means of renewing the air,) would destroy the vitality of all the air in a single hour. Imagine a human being closed up in an air-tight cell for a night of eight hours with only 1000 cubic feet of air to breathe! But this is trifling compared with what many would endure who are compelled to live in dwellings of much less capacity, but who, fortunately, often are unable to keep out the very means which affords them an existence.

It is to be remembered, however,

that all the danger does not arise merely from the fact that a certain amount of air has been consumed, and its place occupied by an equal bulk of carbonic acid gas. Within certain limits, as has already been hinted, the carbonic acid gas does no special harm. That given out by combustion is not so bad as that given out by the lungs. The blood, as it passes through the body, distributing the life-giving-elements, gathers up at the same time many impurities, and each expiration sends forth with the gas those fine particles of refuse matter separated by the lungs in the process of purification. To breathe carbonic acid gas in any degree of purity is to die by suffocation; to breathe over and over again the expirations from the lungs is to breathe approximately not only pure carbonic gas, but also the impurities of the system contained in this gas—the rapidly decaying organic matter cast off as useless and injurious by the organs of the body. Should the body be a healthy one, how loath should we be to inhale its impurities; should it be diseased, how much greater care should be taken not to allow our lungs to come in contact with its effete matter! If we are unwilling to breathe over again our own expirations, how much more unwilling should we be to inspire those of others! Your imagination can supply abundant suggestions of the revolting positions in which a man may be placed: the close proximity to fetid breath often experienced in a crowded and heated car, the densely packed church, the overflowing theatre, the closed carriage on the way to the cemetery, the "comfortable" air-tight guest chamber to which you are hospitably welcomed by kind and considerate friends, the crowded school-

room in which are packed a hundred little souls who even with their bounding health can not prevent that which they expire from decaying and filling the room, causing you to stagger and reel as you attempt to cross their threshold. As we look at it and ponder over it, we wonder that we are so stupid, so inactive, do so little to remedy what is sapping the foundation of our lives, and, as some believe, of our very souls, unfitting us to perform well the duties of life, and causing us to be careless of the soul's immortal interests.

We look about us, and on every hand see the ill effects of a wanton neglect of the use of the very thing that has been given to us in the greatest abundance, and which we have "without money and without price." Everywhere, in the pale face, in the lustreless eyes, the languid step, we see the indications of a want of a supply of fresh air. We see starvation in the midst of plenty. That child in the school-room is not wanting in intellect, but makes no progress, takes no interest; it is starving for pure air. That teacher is weak, dyspeptic, consumptive. He is dying for the want of fresh air. The minister wonders why his congregation sleeps while he attempts to present to them the loving kindness of their Maker, or heaps upon them in thunder tones the terrible threatenings of Sinai. They are simply dull from breathing their own and their neighbors' fetid exhalations. The pleader at the bar is disgusted that with all his well-known and well-earned reputation for logic and eloquence, the judge and jury sleep. Nothing is proof against the insidious power of the air from which the living principle has been extracted. The physician,

with all his skill, finds his patient daily grow weaker and weaker, and finally sink into his last sleep. He has simply failed for want of the exhilarating influence of the everywhere abounding fluid of which he has been deprived by the ignorance, penury, miserliness, or recklessness, of those who have him in charge.

Let us see if there is a remedy, and what it is. When such results as have been named proceed entirely from a want of pure air, the simple remedy is to obtain a proper supply. We can, of course, go out of doors, if we are well and have the time. But we cannot always sleep out of doors, nor perform all our labors in the "open space." We must have *protection* from the elements as well as their *good offices*. To obtain them require both time and money. We have in late years made many forward steps. But much remains to be done. Our first duty is in our homes; there where all that we hold "precious and dear" are gathered, and where our restful hours are spent.

One thing prevents the ill effects that might otherwise be expected to follow what would seem to be poor ventilation; and this is that we cannot, if we would, make our houses airtight; so that in spite of all our efforts to keep out cold or heated air, Nature steps in and defends our health, when we are doing much to destroy it. Neither wood, nor brick, nor stone, can prevent the air from reaching the interior of our domicile, be it ever so high or ever so humble. Our doors and windows leave openings for its entrance; so that at least one of the requisites for ventilation, to wit, an INLET for the air, is furnished for every house. These inlets, however,

may be very far from accomplishing the most desirable results. The openings thus furnished may be productive of unpleasant and unhealthy draughts, may pass directly from the point of entrance to one of exit, and thus freshen only a very small portion of the confined air. Besides, if the room have another of the requisites needed for good ventilation, namely, an **OUTLET**, the pressure toward this opening may be so great that every time a window or door is opened, a deluge of cold air will rush in and destroy what should be a steady current setting toward the outlet. Thus, in an ordinary dwelling, the outlet may be, and very often is, the chimney, the heated air and gasses in which being lighter, rise, or rather, are forced upward by the pressure of the colder air. This power has not only to do the work on the column of air within the chimney, in setting it in motion and in overcoming frictional resistance to its flow; but it has also to set the air entering the room in motion and to overcome frictional resistance at the inlets. In many instances, the latter part of the chimney's work is the more considerable of the two. From want of proper inlets air has to be dragged in at a high velocity and against much resistance.

The true remedy is to provide proper inlets. The discharge of air by an ordinary open fire and chimney varies widely, depending on the rate of combustion, the height, and section, and form of the chimney, and the freedom with which air is entering the room. When, therefore, a room is occupied by half-a-dozen persons, and air is to be supplied to them at the rate of 10,000 cubic feet per hour, it is probable that an ordinary chimney will serve

the purpose of an outlet. If more than this number is to occupy the room, some additional means should be used, such as gratings in communication with flues leading to the open air, to carry off the excess of impure air. Proper inlets for the air are of just as much importance as outlets. Their absence in a house where several fires are burning, forcing a great amount of air through the chimneys, involves a very serious danger. When air which must be supplied to take the place of that discharged by the chimneys can only struggle through small openings, and the pressure within the house falls considerably below that of the outer air, the water traps, basins and closets are liable to be forced, and foul air is drawn in from every leak in soil-pipe and drain. In this way, it has been found that a house was drawing what seemed to be its main supply of "fresh" air from a public sewer, through a defective joint between the soil-pipe and the (untrapped) house-drain. And it has been found on many occasions that some of our modern dwellings, finished in the highest style, and garnished with the richest coverings, have been merely the abode of disease and death, whither innocent mortals have been enticed in the hope of happiness and health.

While, then, we see the necessity for ample inlets for air, care must be exercised to avoid such currents of air as will give the disagreeable and dangerous sensations of draught. At ordinary temperatures, a current of outer air to which the body is exposed will be felt as a draught, if its velocity exceeds two, or at most three feet per second. The current entering the room may, however, be allowed to move at a speed much greater than

this without causing discomfort, provided its direction keeps it from striking directly the person of the inmates. To secure this, it should enter, not horizontally, nor through gratings in the floor, but vertically through openings high enough to carry the entering stream into the upper atmosphere of the room, where it will mix as completely as possible with the warm air of the room before its presence can be felt. This I understand to be the opinion of J. A. Ewing, in the *Encyclopædia Britannica*.

Many devices for this purpose have been tried, and with varying success. But there really seems to be no reason for this manner of introducing the outside air except the first one given, to wit: the prevention of contact between the draught and the persons of the occupants of the chamber. Consequently, any device that will prevent this contact should answer the purpose. It is even believed by some that no danger exists in sleeping in a room where a current of air passes over the body of the sleeper; and that even should the current strike him the danger would be trifling did he but have his face toward it. However this may be, there is generally little need to run the risk. A simple contrivance within the reach of all, a muslin-covered frame placed at the top of the sash, occupying a part of its space, will admit the air, and avoid the draught.

If, instead of fire places, houses are furnished with stoves for heating purposes, it is evident that all the precautions must be redoubled, and that the danger is greatly increased by the difficulty of keeping the stoves at a proper temperature, so as not to

destroy by heat the life-giving principle of the air.

Hence, the ventilation of our school buildings is a matter of great interest to every parent; for a goodly part of the life of every child is spent in the school room. In the small buildings in the country, the same means of obtaining good air may be employed as in smaller dwellings. But in large educational structures the fire place and stove cannot be used to advantage, and a resort must be had to other means of heating. The necessity for this is manifest when we consider the number of children usually collected in a single room. On the supposition that fifty are present, there should be a supply of at least 40000 cubic feet of fresh air each hour. That is, in each room containing fifty children there should pass into the room 800 cubic feet of air, and pass out of the same room the same number of cubic feet of vitiated air every minute; or, in a room thirty feet square and nine feet high there should be an entire change of air every ten minutes. This we take to be a very moderate estimate, the authorities varying greatly on this point, their estimate ranging from 300 to as high as 2000 feet per hour for each person.

In addition to having proper inlets and outlets, means must be employed to drive in and draw out—drive in the pure air and drive out the foul; and a perfect system for this purpose is a desideratum. Many plans have been projected; but none as yet is perfect, though there are some very good approximations.

Another matter is the bringing of the air to the proper temperature. In some respects it would be preferable to bring the air from the outside directly

into the room ; but this is met with the objection that there is too much danger of suddenly chilling the air. The method of first heating the air in an outside chamber before introducing it, has the objection that when it enters a room it is much more apt to deposit on the walls the deleterious substances suspended in the air. There should be a mean between these two. The air admitted should be neither too cold nor too hot. And this can be arranged by allowing it to pass through a heated chamber, and if heated to too great a degree, tempered with air admitted from without on its way to the room which is to receive it ; valves being arranged so that air may be admitted from either source, and in quantities easily regulated.

Two other rules should be followed :

1. In whatever manner air be brought to the chamber, it should enter at a point at least three feet higher than the heads of the persons occupying the room, and never admitted through openings in or near the floor ; since such admission not only occasions uncomfortable draughts, but is apt to foul the air. 2. The outlets should be near the floor. It is well known that these rules are sometimes reversed, that the pure air is admitted through openings in or near the floor, and the impure air allowed to escape or drawn off from openings in or near the ceilings, and with moderately fair results. But this latter method would not be our preference.

But we have more than occupied the time allotted to us. We have spoken almost wholly as to the importance of pure air as a hygienic factor. There are other factors quite as important.

As we have said, our health, our lives, are dependent on the air we

breathe. But what has been said and what yet remains to be said as to our daily food, our habits, the climate we choose, the land upon which we locate our dwellings, the clothing we wear, the tempers we cherish, the passions we gratify or repress, and the thousand and one things that have a bearing on our hygienic condition? These are all matters that demand our serious, earnest attention, and call upon us, as we value our own lives and those of our families and friends, to be up and doing that the sanitary condition of our people may be improved, and valuable lives longer spared to act well their part and be a blessing to the nations.

No man endowed with the single sense of smell can walk the streets of these two cities without a solemn conviction that disease and death lurk in the damp and noisome cellars of many of our dwellings ; that foul and decaying matter, beside pouring its flood of sickening smells upon the passer-by, is finding its way into the upper floors of these same houses, and endangering to an alarming extent, as we were yesterday so forcibly reminded, the lives of their inmates. The Almighty has showered upon us advantages exceeding those granted to any other people in that he has given us a fuel* that yields its results without an effort on our part. Yet upon every hand, are we saluted with the sickening odors of imperfectly consumed garbage, as it comes from the chimneys of our bakeries and manufactories where one would expect all cleanliness to be present, and this simply because a few cents daily may be saved from the hands of the man who carts away our rubbish. What the Jews

*Natural Gas.

had left over after certain days, was to be *entirely* consumed. I fear our combustion is not in accord with the Jewish law.

We have now, as you see, scarcely reached the threshold of our subject; but had our chairman been strict he would some time ago have "called a halt;" and lest he should be tempted still to do so, we leave these matters with you, hoping that you may have determined on your part, to do all that lies in your power to bring about the ages when men of a hundred years shall be no more of a curiosity than now are those of fifty.

BEEF.

BY EPHRAIM CUTTER, M.D., LL.D.,
OF NEW YORK.

The prominence given to the preparations of food from kine may be briefly explained as follows:

1. Beef is the only article of solid animal food on which man can live and thrive for any length of time indefinitely. This was proved by Dr. Salisbury in his experiments on feeding men with only one solid food at a time; to see how long they could live on it, and how the functions of digestion, assimilation, nutrition, excretion, &c., were performed. He found that beef was the only food which would support life normally right along. Whence it is apparent that on this dictum has been laid the foundation for the treatment of consumption, Bright's disease of the kidneys, dyspepsia, rheumatism, asthma, hay fever, chronic diarrhoea, consumption of the bowels, and other diseases which have been classed as incurable, hitherto.

Other details of the advantages of

beef as a diet are,—easy digestion, and assimilation in the stomach, that is, getting into the system with a minimum of force of digestion, and when there giving a maximum of nutritive value to healthily build up all the normal tissues of the body as the blood—the nerves—the bones—the muscles—organs, as the eyes—teeth—nails—hair—liver—heart—kidneys—spleen—pancreas—intestines—digestive glands—skin, &c.

Beef is generally palatable to all—but there are some strong exceptions, owing to individual tastes, prejudices, feelings, and appetites. But even some of these cases have been cured by living on beef alone.

Take a typical case of consumption of the lungs. The morphology of the blood in consumption is characterized by,

1. A ropiness, adhesiveness, blanched color, unrigid outlines, massing together in huddled outlines, ridgy rows, &c., of the red corpuscles.

2. White corpuscles enlarged by the ingathering of vinegar yeast.

3. Fibrin filaments, massive and marked, which hold the red blood corpuscles in the peculiar aggregations named.

4. Collections of vinegar yeast which take peculiar and varying shapes larger and amoeba like, quite filling the field when the case is very bad. Smaller and more rare as the disease is inactive and not so pronounced.

Now a diet of chopped beef will remove all these abnormal phases and restore the morphology of healthy blood. I speak advisedly. There is no other food, liquid or solid, that will do this. It seems as if nothing more were needed to establish the precedence of beef as the best food of

Motherhood. To adopt which seeks the physical, intellectual, and moral culture and welfare of the family in charge. Still it may be well to add that many people have found this out years ago independent of the authority here named. The following is a practical illustration. See "Beef Makes Muscle." Pugilists know it. The world knows it when the daily press teems with every particular about the "Champion Slugger of the World." So of champion oarsmen, walkers, swimmers, divers, hunters, herders, cow-boys, and all prominent instances of human physical culture. All put beef at the head but none have put it as high as it is here. The beef products for food may be placed in the order of excellence for people in health as follows:—premising that broiling is the most preferable mode of cooking.

The following are from Beef:—

Round Steak if tender.

Porterhouse Steak.

Sirloin Steak.

Tenderloin Steak.

Hamburg Steak.

Roast Beef.

Corned Beef, (if not too much corned.)

Salt Beef.

Dried Beef.

Smoked Beef.

Tongue.

Ox Tail.

Calves Feet and Heads—Veal—Tripe.

Milk.

Cream.

Butter—Cheese.

The preparations made from the the above are not so desirable as the admixtures must be of less food value. There is nothing like the fresh healthy beef for nourishment.

Cooking is needed to destroy parasites in the beef as *tænia*, for example, and to make it more digestible.

Raw meat may answer when necessity calls for it, but raw beef does not digest well in man however well it does in lower animals. Beef should not be cooked so as to be hard and dry for it will not dissolve in the gastric juices. The best fire to cook beef steak is made of charcoal. Broiling is better than frying as it has a ventilation which allows the products of the high heat to escape which some consider unhealthy.

In frying the temperature is raised to that of boiling fat, which is about twice as high as that of broiling. This high heat takes out the water of the tissues and making the muscle fibre dense, hard and amber like, renders it unfit for digestion—besides keeping in the empyreumatic products of the cooking of the tissues, (the reverse of broiling.) Steaks can be nicely broiled over or under a gas stove without burning or spoiling, and this mode of cooking is probably the most uniform, quickest and most preferable common way of cooking steaks.

Oil stoves also offer a good mode of broiling steaks. With the ordinary range or stove there is some tact needed to get the exact temperature for broiling a steak. It is a curious thing that one-tenth of the families in this land leave that nice, important and indispensable work to the lowest order of intellect in the house! Motherhood should see to this department closely and teach its daughters that it is a fine accomplishment to cook steak properly.

There is another way of cooking a steak, which my son, Dr. J. A. Cutter

approves, which college boys practice, and which is worth knowing, to wit: putting the steak on to a bed of live coals, glowing but not flaming; the outside may char somewhat, but the steak is always rightly cooked.

Steaming is an excellent way of cooking. No family should be without a steam cooker. The Chamberlain steamer made in Boston, 25 Union Street, is one to be recommended.

Salt meats should not be preferred to fresh, but when selected should be carefully cooked. They are not so nutritious, as according to Leibig, 8 per cent of the nutritious salts are lost in the brine!

THE SMALL POX AT NANTICOKE.*

BY LEWIS H. TAYLOR, M.D.,
Of Wilkesbarre, Pa.

The Steamship *Rugia* from Hamburg, which arrived at New York, December 2d, 1888, brought among other passengers two families of German Poles named Liezkowski, who came directly from Castle Garden to Nanticoke, arriving December 4th or 5th. They went at once to live with relatives of the same name in that part of Nanticoke, known as Honey-pot.

On December 24th, Dr. Daniel Evans was called to attend a child, aged two years, in the Liezkowski family, in which the newly arrived emigrants had taken their abode. He found the child suffering with Small Pox, and a brother partly convalescent from the same disease, no physi-

cian having been previously called to the latter patient, although he had been ill since December 17.

Dr. Evans at once reported his suspicions to the borough council, and that body through its sanitary committee requested another physician, Dr. Holly, to investigate the matter also. This he did, finding two cases of genuine Small Pox.

The house in which these patients lived was immediately quarantined and no one allowed to enter. A pest-house was built as soon as possible, at least seven hundred yards from any other building, and these two patients removed to it. The younger child died January 1st, 1889.

These children were not of the emigrants, but were living in the house to which the newly arrived emigrants came, and the question naturally arises at this point, whence came the contagion? Subsequent investigations revealed the fact that a boy of Franz Liezkowski's family that arrived in New York, December 2d, was slightly sick and had a few eruptions on his body soon after they moved into the block where the disease made itself manifest. Clearly then, in this account we have the origin of the trouble.

Had the Sanitary Committee displayed the same zeal and judgment in managing subsequent cases that arose as they did in the beginning of the trouble, there would have been no occasion for this paper, nor would there have been over fifty cases of this loathsome disease as a public charge upon the borough and district poor board.

At the time of the breaking out of the disease in the Liezkowski family there were twenty-nine persons in the tenement house who were presumably exposed to the contagion, and of these

*Read before the Sanitary Convention held at Pittsburgh, May 31st and June 1st, 1889.

the following developed the disease in the modified form :

Joseph O., æt. 17, vaccinated, taken ill January 12th, 1889.

Frank O., æt. 15, vaccinated, taken ill January 13th.

Agosta O., æt. 12, vaccinated, taken ill January 14th.

Martha O., æt. 6, vaccinated, taken ill January 14th.

Joseph O., æt. 2, vaccinated, taken ill January 17th, died January 22d.

Martha D., æt. 2, vaccinated, taken ill January 16th.

Madriska Liezkowski, æt. fourteen months, vaccinated, taken ill January 18th.

Martha Liezkowski, æt. 2 years, vaccinated, taken ill January 17th. Eight in all.

These with one exception recovered, and so far as can be ascertained, the disease did not spread directly from any of them, though they were not removed to the pest house.

Frank Haney, æt. 29, not vaccinated, was employed as watchman at the pest-house in which the first two cases were placed.

The child that died January 1st, in the night was placed in its cradle outside of the pest-house, and the watchman returning from town in the morning so found it. He was much frightened, returned to his home in the centre of the borough, and on January 7th, was taken ill with the disease in confluent form. He was not removed to the pest-house, but was treated right near the centre of a populous town, in a quarantined house it is true, but as subsequent events show, not with precautions sufficient to prevent the spread of the contagion. Had he been removed and his house

thoroughly disinfected, in all probability, the epidemic could have ended at this stage; for from this patient directly or indirectly arose nearly all of the subsequent cases.

His three children, Peter, æt. 7; Susan, æt. 11; and Julia, æt. fourteen months, were taken ill from January 22d to 24th.

Catharine Ebdon, æt. 29, not vaccinated, living in the same house, and Mary Reese, æt. 22, not vaccinated, living about a hundred yards away were taken ill about the same time, *i. e.*, January 24th.

The latter was ill five days, in a house containing thirteen in family, before her disease was pronounced Small Pox; she was then removed to Haney's house and there recovered. The other members of her family were vaccinated and none of them took the disease.

The next patient, Mrs. Chas. Wagner, æt. 22, not vaccinated, taken ill February 2d, lived in West Nanticoke, across the Susquehanna River, nearly a mile away from the other cases, and neither her physicians nor friends could give any history of contagion.

The only possible source was found in the fact that her husband, a teamster, constantly visited Nanticoke, and it was thought possible that he might have carried the disease to his wife without becoming affected himself. This patient was carefully quarantined and treated by Dr. Morris, and no other cases appeared in West Nanticoke.

The next, Wm. Beddow, æt. 22, not vaccinated, taken ill February 12th, could give no positive history of contagion. His brother, Henry Beddow, æt. 6, not vaccinated, taken ill March

1st, evidently contracted the disease from William.

Following these we have a group of cases consisting of Nora Mack, *æt.* 21, not vaccinated, taken ill March 1st.

Mamie Mack, *æt.* 9, not vaccinated, taken ill March 14th.

Joseph Mack, *æt.* 5, not vaccinated, taken ill March 14th.

Mary Mack, *æt.* 28, not vaccinated, taken ill March 17th.

Nora Clifford, *æt.* 19, not vaccinated, taken ill March 21st; and all closely related, and all living together. These illustrate one of the difficulties in dealing with Small Pox, which will be touched upon further on, viz: the failure of patients to report illness. The history of this group is not positive, but the generally accepted opinion is that a brother of the sisters, Mrs. Mack and Miss Clifford, had the disease in a light form, and did not call a physician to attend him, subsequently his two sisters became infected and died. The others of the family recovered.

In the history of the next group, the Walton family, we have also an unfortunate circumstance that tended greatly to spread the contagion. In this family a man, his wife and one child were treated for Chicken Pox in the latter part of March. Before they were quite well, two other children in the house were taken ill and the disease then correctly pronounced Small Pox.

Before these patients were quarantined, probably a number through visits to them were exposed to the contagion. Matilda Frank, *æt.* 29, vaccinated, a sister of this family was taken ill April 3d.

John Tibbs, *æt.* 20, visiting officer of a lodge, called on the above men-

tioned family while they were supposed to be suffering with Chicken Pox only.

Eugene Alexander, *æt.* 53, vaccinated thirty years ago, a poor director, was taken ill April 22d, and removed to the pest-house. It is supposed that he contracted the disease in the discharge of his duty as poor director.

The next group:—

John Needham, *æt.* 9 months, not vaccinated, taken ill April 3d.

Mary Needham, *æt.* 23, not vaccinated, taken ill April 4th.

Joseph Needham, *æt.* 2, not vaccinated, taken ill April 16th.

Josephine Toole, *æt.* 20, not vaccinated, taken ill April 16th.

Terrence Needham, *æt.* 16, not vaccinated, taken ill April 16, and all lived in a house just across a small alley to the Mack family, previously mentioned. These houses have windows opposite each other.

Ernest Munt, *æt.* 37, taken ill April 13th, lived near Beddow, who was probably convalescent in the latter part of March.

Richard Hughes, *æt.* 20, not vaccinated, taken ill April 10th, was clerk in a drug store, and lived near the Mack family. He was broken out nearly a week before it was discovered that he had Small Pox; then instead of being taken to the pest-house he was allowed to return to his father's house some distance away. His brothers and sisters were sent away until he had presumably recovered, when they returned, and all took the disease, the father also becoming affected. These were, besides Richard, Edward Hughes, *æt.* 13, not vaccinated, taken ill May 10th.

Mary Hughes, *æt.* 9, not vaccinated, taken ill May 10th.

Eneuris Hughes, æt. 15, not vaccinated, taken ill May 13th.

Ziba Hughes, æt. 7, not vaccinated, taken ill May 12th.

Selina Hughes, æt. 11, not vaccinated, taken ill May 12th.

Richard Hughes, Sr., æt. 40, not vaccinated, taken ill May 14th.

These absolutely refused to be vaccinated. All except the first one ill of the family, Richard, Jr., were removed to and treated at the pest-house. Eneuris, æt. 15, died May 19th.

The next group of four, consisting of Thos. N. Davis, æt. 28, vaccinated, taken ill April 18th.

John Lewis, æt. 5, vaccinated, but did not take, taken ill April 18th.

Mary Blackwell, æt. 7, vaccinated, but did not take, taken ill May 13th.

George Daniels, æt. 23, taken ill May 20th, were all visitors to the Hughes family, and presumably took the disease from them. These were all removed to the pest-house.

Thos. J. Evans, aged 14, vaccinated, but did not take, taken ill April 13th, and J. Evans, aged 15 months, vaccinated, taken ill May 1st, were children of the Small Pox physician, and were removed to the pest-house, as was also Sarah Jones, a domestic in the same family, a very light and irregular case.

Thus far six deaths have occurred, and over fifty cases have been treated; the deaths excepting the two very young Polish children were all in unvaccinated persons. There are at present, June 1st, eight cases under treatment, all in the pest-house.

The history of this epidemic of Small Pox presents to us certain points of interest, that may well engage our attention for a short time on this occasion, as well as certain lessons and

warnings that all should heed; and I desire to allude briefly to a few of these hoping that a free discussion of the same may possibly aid us in future dealings with this scourge.

First then, why should Nanticoke have had any Small Pox at all?

These emigrants that came in the *Rugia* came from a district in Poland, said to have been at the time of their departure infected with Small Pox, and they certainly brought the disease with them though the quarantine authorities at New York State, that no case of Small Pox appeared on the *Rugia* later than October. This, they say, was carefully isolated and disinfected, but nevertheless the fact remains that the disease was brought to Nanticoke and the immigrants who came in that vessel, arriving December 2d, brought it. Had there been stricter quarantine regulations and more searching examinations of passengers, the contagion might possibly not have been carried.

Secondly, having the disease in the borough, why should it be allowed to spread?

When I first visited Nanticoke to investigate the reports concerning Small Pox, on January 7th, 1889, in response to instructions received from the Secretary of the State Board of Health, I found that a pest-house had already been built, the first two cases removed to it, and that the exposed persons had been vaccinated.

The Council seemed alive to the responsibility and its Sanitary Committee anxious to take all necessary steps to stamp out the disease in its inception.

But the first error of all was in employing as watchman at the pest-house a man who had never had the disease,

and who had not even been vaccinated ; and the second was, in allowing this man after he had contracted Small Pox to be treated in his own home instead of removing him to the hospital. The Chairman of the Borough Council stated to me subsequently that the committee desired to remove him, but his physician would not consent, saying his patient was in such condition that his removal would not be advisable. Argument in favor of pest-houses for the treatment of this disease and for the forced removal of all patients to them, should not be necessary in this day, and yet we find it a difficult matter to impress upon the local authorities and upon patients themselves the importance of this measure. We say then, that the failure on the part of the Sanitary Committee to remove all of these cases to the pest-houses as recommended by local physicians and the medical inspector was a serious error in the management of the epidemic, and contributed largely to the spread of the disease.

A third error is found in the fact mentioned in the early part of this paper,—the great difficulty in getting a certain class of people to report cases of Small Pox, or to place patients under a physicians care.

We can correct this largely by educating the masses through the public schools, the public press if necessary, and by circulars of the State Board of Health, upon the subject of contagious diseases in general, and especially upon the importance of letting the presence of such be known to the proper authorities immediately.

A fourth difficulty is in error of diagnosis. How shall we meet this? By quarantining every suspected or

doubtful case until its true nature can be determined. In times of a Small Pox epidemic every case of suspected Chicken Pox should at least be quarantined as Small Pox, and so treated until all danger is passed.

A fifth difficulty so far as this local epidemic is concerned, and a serious one, came from the failure of the Borough Council to complete its organization and enact suitable ordinances to meet the emergencies that might arise. At my second visit, January 21st, I found nine patients in all, and these were quarantined in two buildings. But two new cases appeared in February, one of these being in West Nanticoke. The term of the efficient chairman of the council, as well as that of two other members expired March 1st, and the new council on account of deadlock on the question of secretary were unable to transact business. The matter of caring for the epidemic was left in the hands of the standing committee, who were unwilling to take the necessary responsibility and incur the necessary expense unless backed up by ordinances of council—the council could pass no ordinances because of the deadlock on the question of secretary. Six new cases appeared in March ; the disease spread rapidly in April, and the situation called for prompt measures.

Upon the urgent recommendations of the Medical Inspector, and of the local physicians of Nanticoke, unanimously presented, and further strengthened by resolutions of Citizen's meeting, held for the purpose of sustaining the Sanitary Committee in incurring necessary expense, the committee was finally induced to adopt more stringent measures toward abating the nuisance. Free vaccina-

tion was at once inaugurated, an old pest-house in use some years ago was repaired, a third built, and all subsequent patients removed to these buildings.

Such are some of the errors and difficulties in managing this disease. How shall they be avoided here and elsewhere in the future?

1. By more efficient quarantine regulations and inspection at our ports of entry.

2. By education of the masses upon the subject of contagious diseases.

3. By the establishment in all cities and boroughs, and even in all townships if possible, of local Boards of Health, with competent intelligent officers, and with definite authority delegated to them; so that, without awaiting action of councils they might proceed at once to cope with epidemics of contagious disease in their very inception. These local Boards would be under the general direction of the State Board of Health, and should have placed at their disposal a contingent fund for necessary expenses in such matters, or at least be authorized to incur such expense as is necessary in carrying on their work without awaiting a special appropriation as must be done by Sanitary Committees in cities where no Boards of Health exist.

EPIDEMICS FOLLOWING FLOODS.

BY W. B. ATKINSON, M.D., *etc.*

The history of all instances where rivers have overflowed their banks to an unusual degree, or where flooding of a locality has been produced by the breaking of levees or dams invariably

shows that some form of epidemic has followed, thus adding greatly to the misfortunes of those who are already affected by the catastrophe itself. Such epidemics are not merely a sequence, but are the direct result of the flood and its consequent overturning of the natural order of affairs in that vicinity. We see this constantly occurring wherever such calamities take place, and find that the subsequent sickness is attributed by the people with good reason to the right source.

Even to the superficial observer such would be the anticipation when one would reflect upon the many and depressing circumstances almost invariably connected with such occurrences. At first, the loss of property alone next to the intense mental excitement would surely induce great depression, followed in many instances by insanity more or less pronounced or prolonged. Deaths from exhaustion and care are constantly seen under such circumstances and as time goes on other maladies may result. These are the direct and immediate effects, but later we find the occurrence of various epidemic forms of disease which are equally to be regarded as direct results of the flooding itself.

Necessarily, owing to the destruction of residences or to these being rendered uninhabitable, enforced crowding must be the rule in the case of the survivors. The baleful results of overcrowding are so well known that it might go without saying. To the student of hygiene we need scarcely speak of uncleanness, ill ventilation, and the like, which are unavoidable in such cases. Now that the students of vitiated air have shown the presence of the various forms of bacilli,

and more recently have indicated the presence in the air expired from the lungs of human beings of an animal poison the exact nature of which has not yet been determined, it is natural that we may anticipate vast additional trouble from such heterogeneous crowding in illventilated apartments. A thought arises whether the enforced respiration of air more or less loaded with such matters may not prove injurious in another way. Constant association of the members of a family, the majority of whom have like natures and conditions, certainly cannot prove so detrimental to each other as where entirely new elements are introduced. In the former there comes a tolerance, or, if we may so speak, an acclimatization by which the system of each is less easily affected, and certainly the evil result is slower in making its appearance. This may account for the rapid and fatal results in so many ill-assorted marriages where youth and beauty are wedded to age, disease, and the like. Now, in the instance of the crowding, the enforced residence under one roof of a greater number of persons than allowable by the amount of fresh air added to the presence of strange natures in addition to those who are afflicted with disease, it is reasonable to look for injury to the health of all, and the weaker soon must succumb.

Next it is almost impossible to avoid for a longer or shorter time a certain privation of food, or the use of that which is unfit for the stomach. Sudden changes in food are always likely to induce sickness, but when the food is greatly lessened in quantity, of inferior quality, of a kind not appropriate to the needs of those who must eat it or starve, illness is sure to result. In

the case where, owing to such a calamity, people of high or low degree are thrown together, there are always a number who by nature and habit are unable to digest the articles of which at first they must necessarily partake. In these there is speedily induced indigestion with its accompanying diarrhoea, feebleness, etc., which rapidly produce attenuation and even death if prolonged. At any rate these cases are thus rendered less able to bear up against the surroundings, and are generally the earliest to be attacked by any form of disease that may prevail.

Again, the waters which have made their escape from their accustomed channels, or have deluged otherwise dry lands, must invariably carry with them in their course a variety of matters which are left after the subsidence as an alluvial, a deposit upon the surface, and which, drying in the hot rays of the sun, are prone to become a nidus for the production of germs which soon act as the breeders of disease in the surrounding atmosphere. In no instance has it failed for us to see such deposits become at a very early moment a source of disease and death. This is mainly due to the presence of both animal and vegetable matters which have been deprived of life by the sudden departure of the waters, and also to portions of bodies of animals or human beings which have been destroyed by the catastrophe and remain partially buried in the debris.

In addition we have the sources of drinking water contaminated from surface drainage and the presence of all sorts of filth.

In these ways are produced both air and water poisoning, which must inevitably lead to the origin of an epidemic influence, the more powerful

from the weakness of the material on which it comes to act.

The throwing together of large numbers of people even under the most favorable surroundings rarely fails to show disastrous results, in the form of epidemic diseases of a low form. This is remarkably evidenced in the history of all wars. The camps, especially, of the new recruits speedily become centres of measles, typhoid and typhus fevers, diphtheria, diarrhoeal troubles, etc. To prevent such epidemics the greatest vigilance is required in the sanitary care of these places. The strictest policing is enforced. In every way the army surgeon finds himself compelled to be watchful against the least infraction of the health laws. As the men become accustomed to the discipline of the life of a soldier they soon come to learn the great value of these rules, and are more ready to aid in their enforcement.

For the reasons just cited, sanitarians everywhere have regarded with intense satisfaction the early and earnest efforts of our State Board of Health, as shown by its indefatigable officers in their work in the valley of the Cone-maugh. They have been confronted by a task of herculean proportions, the magnitude of which they recognized at the outset, and we are glad to find that their efforts are being ably seconded by those in authority and by the people of the stricken district. Nor will it soon be completed. Not until every portion of the locality has been thoroughly cleared of the debris, the houses dried and pronounced habitable, the soil cleared of the deposits of every kind, and the infected soil thoroughly disinfected, the cellars cleaned, whitewashed, and carefully treated with the proper means to prevent their becoming the source of injurious ema-

nations to poison the atmosphere of the house. Then, and not till then, may the work of the sanitary board be regarded as approaching an end with the hope of there being no evil result at a later day, when all is fancied security. So subtle are many of these sources of disease that it often happens that we find them lying ready as a thief in the night to spring upon their victims.

Hence, the work will not cease perhaps even long after the palpable evidences of the calamity are removed; like the vicinity of a battle field, the least sign of disease of an epidemic form must at once be inquired into, its origin found, if possible, and removed.

While we do not wish to be regarded as an alarmist, yet it must not be forgotten that for a time unseen influences will be insidiously at work, which if neglected may render unavailing much that has been so ably done. Hence the continued active service of the sanitarians must go on. We feel that the Board is to be congratulated upon the readiness with which its executive officer recognized at so early a moment the needs of the hour, and at once threw himself with others of the board into the work of interposing what sanitary barriers he might, against the inroads of the epidemic influences, which from his vast experience he knew would soon begin their deadly action.

The lesson of the hour is the great importance of a grant of sufficient funds to enable the board to spring to the rescue in such emergencies. In these cases there is no time for delay; though the officers of the board were greatly handicapped, fortunately they were soon met by the proper action on the part of an enlightened state government.

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EDITORIAL.

THE "CRANK" REVOLVES.

When, in our last issue, we asserted that, owing to the economical treatment by the legislature of the "Sanitary Cranks" of Pennsylvania, the said "cranks" would be compelled to remain, for the present, as consulting cranks, we did not dream that within a few days after penning those words, the most dreadful of modern calamities would start these cranks to revolving. The terrible floods that have devastated the most charming and most thriving portions of our State, the unbridled fury of nature, the mad, headlong, almost demon-like rush of the waters, has demonstrated to the people of Pennsylvania, as no words could ever possibly have done the great practical utility of a State Board of Health.

Within an hour thousands of the citizens of Johnstown are dead and from the whole country goes up a simultaneous cry that an epidemic will surely follow this horrible holocaust. In the past such has invariably been the case, why will not history repeat itself in

the present instance. With this terrible danger most imminent, to whom do the people turn; with one accord to the State Board of Health. Before the thought of plague or pestilence has entered the minds of the people, the thought has suggested itself to the State Board of Health, and within twenty-four hours from the first news of the disaster, a committee from this Board, headed by the energetic and indefatigable Secretary, Dr. Benjamin Lee, is at Johnstown, already hard at work, to remove the causes that are found to exist favorable to the occurrence of an epidemic. From the moment of their advent even unto the date of this present writing, this committee has been, (and we can assure our people that until all fear of an epidemic has passed, they will continue to be), on the spot, here, there, everywhere, wherever sanitary effort is required, tireless, working day and night, all that this State may be spared the additional and even greater horror of a plague.

Our Governor, always and ever alive to the welfare of his people, turns to the State Board of Health and says "if you declare the condition of Johnstown a nuisance prejudicial to public health then do I feel warranted in spending money, even to the extent of one million of dollars, if necessary, to abate this nuisance." The Board promptly makes this declaration, and thus starts into operation the machinery that will result in removing from the valley of the Conemaugh and the valley of the Susquehanna the pestilential conditions that are now to be found therein. Surely we may be pardoned for saying that the "cranks" are truly revolving and revolving with such fatal precision to insanitary conditions that

our good people can rest fully assured that the State Board of Health stands between them and plague as an insurmountable and impassable barrier.

When we read, elsewhere in this issue, of the plagues that *should* follow floods, we are constrained to ask why is it that with this most terrible and most fatal of modern floods the probabilities of a plague are as naught.

If we wait for the report of Dr. Lee (in our next issue) of the work that has been done by the State Board of Health at Johnstown, this question will be amply answered. Must we not admit that the "cranks" have revolved with most beneficent and most salutary results.

Can it be possible that hereafter there will be found anyone in this great State so obtuse as to ask, as has been repeatedly done in the past, "of what use is a State Board of Health"?

Compare what has been with what is; recognize the agency that has compassed this change and then say whether the State Board of Health of Pennsylvania has not unquestionably and indisputably demonstrated its right not only to exist, but to be regarded as one of the most important branches of the State Government. Local health officials have worked nobly and to them be all just praise given, but the State Board has been at the helm.

In the whole history of Sanitation in this country, such a sanitary problem as the present one has never before presented itself to any State Board of Health, and the Keystone State has ample reason for pride that its Board has been equal to this unparalleled emergency.

The imminent danger of a plague has now passed, but the fear that the warm weather of summer may pro-

duce an unusual amount of sickness is still with us and this fear calls for a word of caution; more particularly in reference to the section of county along the west branch of the Susquehanna River. The cities and towns in this section were, for the better part of two days, some eight or ten feet under water and it was dirty water; most of the houses in these towns drain into cess-pools, which have, of course, overflowed; so that in addition to the mud and dirt brought in by the flooded rivers there is, in nearly every cellar, fæcal matter from the cess-pools; neither is this confined to the cellars, for the water mounted well up into the first floors; so that we can readily understand how a filthy deposit of mud and fæcal matter must have coated the floors and walls not only of the cellars, but of all parts of houses and stores reached by the flooded waters. This is not theory, for our own individual sense of smell demonstrated the practical truth of it in all the towns that we visited along the Susquehanna River.

The removal of the gross filth is being rapidly and satisfactorily attended to by the local health authorities and by the time these words reach our readers most of it will be gone; but this slimy coating of filth is a matter that each individual must attend to for himself. Let us urge upon the people in our flooded districts that the walls of their cellars should be repeatedly white-washed and that disinfectants should be scattered about, at short intervals throughout the whole summer, even until cold weather is upon us; let us go to the upper floors and well scrape all the walls that have been encroached upon by the waters, and having scraped them, wash them well with some dis-

infectant solution. Let us urge upon them to thoroughly air their houses and stores ; let us tell them in the most emphatic and unmistakable terms that individual effort must supplement official work and that if they would entirely avoid all bad results from the flood, they cannot rest satisfied alone with the word of their health officials. Let us cry out to them in stentorian tones that they "MUST CLEAN UP" ; let the scrubbing brush and a bar of soap be the temporary coat of arms at least of that portion of our State that has been so sorely afflicted ; let no nook nor corner that has been reached by the flood escape the vigilant brush of the housewife ; clean to-day ; clean to-morrow ; clean all the time ; clean until no speck of dirt is visible anywhere ; do this and your immunity from plague is assured. Clean as you never cleaned before, because your premises have never before been so dirty. Remember that disease germs breed, multiply and thrive on dirt, while cleanliness is absolutely fatal to them. Remember that in cleanliness lies your great security ; so then get to work and clean up everywhere.

You may think that your Governor has been nobly equal to this emergency (and if you do so think you will simply be doing him justice) ; you may think that your State Board of Health has been most energetic (here again you will be right) and you may think that your local health officials are the noblest and grandest men in your towns (and here again you will not be wrong) but in spite of all these instances wherein you are right ; if you do not thoroughly and immediately clean your premises, you will have sad reason to think that you, yourselves were wrong when you are stricken by

the sickness that will be the inevitable result of neglect on your part. So, then, *clean up* ; let us beg of you, as you value the health and lives of yourselves and those dear to you, let us urge upon you in the name of the State and the State Board of Health to at once remove from your premises every vestige of the slime that the cruel floods have inflicted upon you.

NOTICE TO SUBSCRIBERS.

We would respectfully call the attention of our subscribers to the bills which we enclose in this issue. A prompt remittance of the amount due will be esteemed a favor. To all who remit, the bill receipted, will be returned in the August issue.

THE ORIGIN OF THE DOG.—The question of the origin of the dog has recently been discussed by Prof. Nehring, who believes that it has descended from various still surviving species of wolves and jackals. The latter animals can be tamed, and many attempts to domesticate wolves have been successfully made in recent times. Herr Ronge has so completely tamed a young wolf that it follows him exactly as a dog might do.

OFFENSIVE ODOR OF THE BREATH due to bad teeth or other causes may be overcome, or at least greatly abated, by the habitual use of *Listerine*. Add a teaspoonful to a tumblerful of water for a mouth wash and gargle, and if a little is swallowed, so much the better. Indeed, a bad breath is not unfrequently caused by the gaseous eructations of indigestion, and for this also *Listerine* is an excellent remedy, in doses of twenty to thirty drops in a little water.—*The Sanitarian*.

NOTES AND COMMENTS.

THE AMERICAN PUBLIC HEALTH ASSOCIATION will hold its Seventeenth Annual Meeting in Brooklyn, N. Y., Tuesday, Wednesday, Thursday and Friday, October 22, 23, 24 and 25, 1889. The preliminary announcement gives a list of interesting topics for discussion.

LIGHT.—A dark house is almost always unhealthy ; always an ill-aired house. Want of light stops growth, and promotes scrofula, rickets, consumption, etc., especially among children. People lose their health in a dark house, and if they get ill they cannot get well again in it.—*Florence Nightingale, Fourth Annual Report Kansas State Board of Health.*

FIVE DOLLARS FOR KISSES.—One of the most fashionable of Philadelphia physicians always kisses his hand when waving farewell to his wealthiest lady patients ; but some of them were comparing notes the other day, and found that for visits when he kissed his hand he charged ten dollars, while for others he charged only five.—*Philadelphia Times.*

HALF GONE WHEN THEY GET THERE.—I was rather amused at the remark of an old inhabitant of Hastings, when I ventured to suggest to him that other health resorts showed a lower death-rate. "That's true," he replied, "but then, you see, our town is so exceptionally healthy that when people have tried every other place they bring their remnants of life here as a last hope, and it is these remnants that ruin our average."—*London Truth.*

EFFECT OF DRAINAGE.—A striking example of the grave importance of sanitation is found in Munich. An excellent system of drainage works was finished in 1881 ; and according to the *Sanitary News*, the annual deaths from typhoid fever, which had numbered 245 up to 1880, were reduced in 1881 to 40, the yearly average since that time.

THE LAST THE WORST.—Dullard, "So old man Richly is dead at last." Brightly—"I wonder he lived so long with all the doctors. Why, Dr. Scalpel had a hack at him, Dr. Piller had a hack at him, and a dozen others." "And now the undertaker has him." "Yes, by gum ! and he's the worst. He got seven hacks and a hearse at him."—*Lowell Citizen.*

DANGER IN SOWING DRY POISONS.—A correspondent of the *Medical World* cautions agriculturists and others, from his experience of poisoning from using a powder for the destruction of potato bugs, on a windy day. Others are reported to have suffered from a similar cause. A special danger from inhalation is that the poison is not expelled by the vomiting caused.

SCARLET FEVER EXTRAORDINARY.—At High Ridge, near Stamford, Conn., there is a wife who is the mother of fourteen children, all living, and none of them twins. All but two live at home, and these two, catching the scarlet fever, went home to be nursed. They gave it to the other dozen, and the whole fourteen were sick at once, and medicine had to be mixed in pitchers and bread pans.

CONSUMPTION IN THE GERMAN ARMY is greatly dreaded by the authorities since the recent Parisian Medical Congress pronounced that the disease was contagious. Accordingly, the German War Minister has decided that the chest of every soldier must be measured once a month. If the chest does not reach a certain breadth, and does not develop with drill and athletic exercises, the soldier will be disqualified as predisposed to consumption, and likely to infect his comrades.

STUTTERING.—It is a well known fact that stutterers, when speaking in a whispering voice show no impediment of speech. This fact has been turned to account by Coen. His method of treatment is as follows: In the first ten days speaking is prohibited. This will allow rest to the voice and the apparatus concerned in articulation, and constitutes the preliminary stage of treatment. During the next ten days speaking is permissible in the whispering voice, and in the course of the next fifteen days, the ordinary conversational tone may be gradually employed.

CANCER AMONG VEGETARIANS.—According to the *British Med. Journal*, Dr. Hendly, the resident surgeon, states that the records of the Mayo hospital at Jeypore, India, show that of 102 major operations for cancer performed, forty-one were on the persons of flesh eaters, while sixty-one were on those of strict vegetarians who had never eaten meat since their birth. This would seem to controvert the popular idea of immunity from cancer on the part of vegetarians, which had received such strong confirmation from

the statements and deductions of MM. Reclus and Verneuil.

HIS GRAND DESTINY.—“You have spent eight years in college, three at a theological school and two in the study of theosophy, and yet you do not intend to enter the ministry. May I ask what special career you are fitting yourself for?”

“I am studying for marriage with a Boston girl,” replied the scholastic enthusiast, his voice tremulous, and his dark melancholy eyes lighting up with an eager, aspiring gleam.—*Chicago Tribune*.

WOODEN NUTMEGS OUTDONE.—The *Sanitary Inspector* tells us that two companies exist in one of the German cities whose special business it is to manufacture machinery and all the appurtenances for making artificial unground coffee,—pure Java in the berry. A roasted meal of some kind, made cohesive with dextrine, and pressed in moulds and afterward polished is how it is done. The artificial coffee is said to be a very good imitation and when mixed with the real article is not easily picked out as false.

BICYCLING FOR HEALTH.—“Brawn makes brain,” thinks Dr. A. L. Hummel, the brawny and brainy “managing Editor” of “THE ANNALS,” and that he may be thoroughly primed for a vigorous onslaught on prospective advertisers, he has been lately developing his brawny brains by a bicycle trip. Recently, in company with three friends, Dr H., mounted his fiery, but *well-tamed* steed and whirled away up the State. He is home again (with a sound body, strange as it may

seem) and, if his physical appearance is any indication of his mental vigor, we would advise advertisers to get under the table when he comes around, unless they are prepared for unconditional surrender and a year's advertising in "THE ANNALS."

DYSPEPTICAL COUGH.—Taking away an undue amount of sugar from the dietary of some children will enable them to pass restful nights when, otherwise, they would have attacks of stridulous cough which would alarm a household. Spasmodic attacks of cough and hoarseness, very distressing in character, accompanied by an eruption of urticaria on the face and neck, occurred in a girl who for two years was unable to drink a glass of simple milk without causing such an attack. If she ate a small slice of bread with the milk, the attacks referred to did not occur. Probably the small amount of bread helped to divide the milk curd in such a way as to prevent stomachal dyspepsia.—*Dr. Beverly Robinson.*

A PRECAUTION AGAINST CONTAGION.—The trustees of the Boston Public Library have decided to adopt a plan of action which will no doubt have a decided tendency to stop the spread of diphtheria and other contagious diseases among those who make use of the library books. Hereafter the Board of Health will cause the library card in each family where a contagious disease is found to exist to be stamped, so as to indicate the presence of such a disease there. The library will thereafter decline to allow other books to be taken out on this card until the contagion has been stamped out from the home. Further-

more, when books are returned from such a locality they will be disinfected, in order that they may not prove a source of contagion in other families to whom they may subsequently be issued.

THE NORMAL MAN.—Prof. Huxley asserts that the proper weight of man is 154 pounds, made up as follows: Muscles and their appurtenances, 68 pounds; skeleton, 24 pounds; skin 10½ pounds; fat, 28 pounds; brain, 3 pounds; thoracic viscera, 3½ pounds; abdominal viscera, 11 pounds; blood which would drain from the body, 7 pounds. The heart of such a man should beat 75 times a minute, and he should breathe 15 times a minute. In 24 hours, he should vitiate 1750 cubic feet of pure air to the extent of 1 per cent. A man, therefore, of the weight mentioned, should have 800 cubic feet of well ventilated space. He would throw off, by the skin, 18 ounces of water, 300 grains of solid matter, and 300 grains of carbonic acid, every 24 hours; and his total loss, during that period, would be 6 pounds of water and a little more than 2 pounds of other matter.

SUNSHINE AS A MEDICINE.—Sleepless people—and there are many in America—should court the sun. The very worst soporific is laudanum; the very best is sunshine. Therefore, it is very plain that poor sleepers should pass as many hours of the day in the sunshine, and as few as possible in the shade. Many women are martyrs and do not know it. They shut the sunshine out of their houses and their hearts; they wear veils; they carry parasols; they do all that is possible to keep off the subtlest and yet the most

potent influence which is intended to give them strength and beauty and cheerfulness. Is it not time to change all this, to get roses and color in our pale cheeks, strength in our weak souls? The women of America are pale and delicate. They may be blooming and strong, and the sunlight will be a potent influence in this transformation.—*Evening Telegraph*.

A LARGE FAMILY.—An enterprising Western newspaper, the *Arkansas Gazette*, has offered a prize to the largest family in the State, with the result of finding a Pike County couple who have had twenty-three children, of whom eighteen are still living. The prize-winners are Mr. and Mrs. W. D. Green, aged respectively seventy-seven and seventy-one years. The couple have seventy-two living grand-children and twelve living great-grand-children. Mr. Green, when married, lacked twenty-five days of being twenty-three years of age, and at the time of the birth of his last child he was sixty-seven years, seven months, and fifteen days old. Mrs. Green, at the date of the birth of her first child, was eighteen years, four months, and six days of age, and at the time of her last child's birth she lacked eleven days of being sixty-two years old. The children were all born singly. The facts are certified to by an affidavit.

A WORD FOR THE BABY.—Now that hot weather is coming again, do not forget to give the baby a drink of water now and then, no matter if it has nothing but milk for food. On board of the railway cars we have more than once seen illustrations, that a drink of water was better for the baby than a dose of paregoric or

soothing syrup, in observing how suddenly the troublesome crying of a fretful baby ceased after the newsboy had made the rounds with his dirty tumbler and the baby had not been forgotten. So offer the baby a drink of water frequently, but be assured when it is practicable, that the water is good and by letting him be the owner of a drinking cup, spare his susceptible lips from contact with the glass which has been to a hundred mouths, some clean and some very otherwise, some healthy and some sick with or convalescing from diphtheria, scarlet fever, consumption, or other communicable disease.—*Sanitary Inspector*.

MR. SULLIVAN'S TRAINING ADVICE.—Not long ago I asked John L. Sullivan if he thought business men whose health was run down could be benefited by a course of physical training, (says a writer in *The Epoch*.) The athlete replied: "Of course they could not train as prize fighters train for a fight. The latter, however, could give the business men some valuable hints about getting into good condition. The first thing for the broken-down business man to do is to eat only wholesome food and to limit his drinking. Most all of that class of men eat rich food and are heavy wine drinkers. They should eat plainer food and let up on their wine. If they would diet themselves and so get their blood in proper condition they would soon get rid of the gout without the aid of medicine. Then they would feel like taking exercise. Walking is one of the best methods of taking exercise; running is also good, if you don't go beyond your strength.

"One of the best forms of athletic

exertion is with the football. Let a man have a big football suspended by a rope from the middle of the ceiling of his garret, or of some other good-sized vacant room, and then let him punch away at it as if it was his worst enemy. The ball will continually bound back to him from every direction and he will have to keep jumping around lively, to get a crack at it. This is one of the best means I know of to limber up your joints and to get your blood in circulation."

SOME CENTENARIANS.—The Large Tontine, which was formed in 1791, affords a curious illustration of the truth of the saying that annuitants live long. The last subscriber has only just died. Originally there were 116,000 subscribers, and the amount thus obtained was 59,000,000 francs. The dividends of those who died were to increase those of the survivors up to 3,000 francs per share, a limit extended in 1806 to 6,000 francs. The surplus was to go to the state, one object of the tontine being to reduce the national debt. In 1886 there were 17 survivors, holding 162 shares. Twenty of the shareholders were centenarians, and one reached the age of 106. Among the deaths registered in England and Wales in 1887 were 60 of reputed centenarians—13 men and 47 women. In the three preceding years the numbers had been 58, 63, and 71, respectively. Thirty-two are said to have reached 100 years, ten 101, and two 106 years, and two women are said to have been 167 and 109, respectively. —*British Medical Journal*.

TO SEW ON BUTTONS.—"When I get a bright idea I always want to pass it along," said a lady, as she sat

watching a young girl sewing. "Do your buttons ever come off, Lena?"

"Ever? They're always doing it. They are ironed off, washed off and pulled off, until I despair. I seem to shed buttons at every step."

"Make use of these two hints when you are sewing them on, then, and see if they make any difference. When you begin, before you lay the button on the cloth, put the thread through so that the knot will be on the right side. That leaves it under the button, and prevents it from being worn or ironed away and thus beginning the loosening process.

"Then, before you begin sewing, lay a large pin across the button so that all your threads will go over the pin. After you have finished filling the holes with thread, draw out the pin, and wind your thread round and round beneath the button. That makes a compact stem, to sustain the possible pulling and wear of the buttonhole."

"It is no exaggeration to say that my buttons never come off, and I'm sure your's won't, if you use my method of sewing."—*Youth's Companion*.

THE SPARE BED.—The "spare bed," which has probably upon times been the beginning of disease and death to unsuspecting victims, comes in for a rather funny "discourse" in *Golden Rule*. "When I go out into the country to visit my relatives, the spare bed rises up before my imagination days before I start, and I shiver as I remember how cold and gravelike the sheets are. I put off the visit as long as possible, solely on account of that spare bed. I don't like to tell them that I would rather sleep on a

picket fence than to enter that spare room and creep into that bed, and so they know nothing of my sufferings. The bed is as square and true as if it had been made up to a carpenter's rule. No matter whether it be summer or winter the bed is like ice, and it sinks down in a way to make one shiver. The sheets are slipperly clean, the pillow-slips rustle like shrouds, and one dare not stretch his leg down for fear of kicking against a tombstone. "Ugh! shake me down on the kitchen floor, let me sleep on the hay mow, on a lounge, stand up in a corner, anywhere but in a spare bed! One sinks down until he is lost in the hollow, and foot by foot the prim bed-posts vanish from sight. Did anyone ever pass a comfortable night in the spare bed?"

STINGS OF INSECTS.—Children being more ignorant, says Dr. Starr, are more frequently stung by bees, wasps, and other insects than adults. Examine the wound the first thing with a magnifying glass, and if the sting be still in the tissues, extract it with a pair of tweezers, or squeeze it out by firm pressure in the neighborhood of the puncture. After this, apply aromatic spirits of ammonia or eau de cologne. These will relieve the pain and itching. When the sting produces great pain and inflammation apply a flaxseed poultice for twenty-four hours. The frequent use afterward of camphorated soap liniment will be productive of good results.

A FLYER ON THE READING RAILROAD.—Philadelphia journals are discussing the recent phenomenally fast run of a Reading Railroad train to Atlantic City, and speculating upon

the almost illimitable possibilities of rapid railway travel which that wonderful performance suggests. The locomotive which whirled seven heavily loaded coaches from Camden to Atlantic City in fifty-nine minutes and forty seconds, or at a rate of a mile a minute, is designated as "Number 1012," and is one of ten new engines all of similar construction, built for fast passenger service on the Reading Railroad's Atlantic City line. They are of the strikingly peculiar design originated by the Reading company, which now indisputably possesses the fleetest and most effective motive power in the country. In conjunction with the highly improved roadway and general equipment of the Reading's Atlantic City division, it may be set down as a certainty that these engines will surprisingly reduce the time between Philadelphia and the sea-shore.

TEA CIGARETTE DISSIPATION.—The ingenuity of the women of London and Paris in inventing new dissipations is without limit. To the morphine habit the devotés of sensationalism have now added the practice of smoking tea cigarettes. Special grades of the finest tea are used, and the effect of the cigarettes is said to be delightful for fully an hour after one has smoked. After that comes a reaction in the form of nervous trembling and excitability, which is best subdued, according to a woman of title who rather goes in for all these things, by a thimbleful of frozen absinthe. Thus, by industriously ringing the changes on morphine, tea cigarettes and absinthe, with a few intrigues, some scandal and a raft of white-hot French novels, the woman of society manages to worry through the day. I wonder if the American

girl's great success abroad is not due to her naturalness and health? There is a lack of ruddy cheeks in London now. Riding schools are empty, and the people who run gymnasiums, where women formerly fenced and exercised, assert the craze is now over. Perhaps it has gone to America. At all events, there is no such disease as morphinomania there, though it is a recognized and widely-prevalent ailment here.—*New York Sun*.

KEEP UP YOUR INTEREST IN LIFE.—Nothing is so conducive to health in old age and the cultivation of a genial frame of mind as not losing interest in the affairs of life (says Dr. Wm. A. Hammond). To grow old gracefully is of itself the best of antidotes to the inroads of time. The mind retains its hold upon matters which have interested it, and loses almost imperceptibly the vigor natural to it. The various organs of the body feel this influence and continue to perform their various functions with a promptitude and efficiency which would be impossible in one imbued with melancholy or full of the consciousness that life had lost its charms. It is folly for elderly persons to seclude themselves from the world and to cease to mingle with the young. The inmates of homes for the aged may sometimes be long-lived, but their existence is more that of the vegetable than of the human being. Death, when it comes, is scarcely regretted, for life has lost its attractions.

TIBETAN CUSTOMS.—All Tibetans slain in battle are honored by the people with offerings of sweet-scented flowers (says *The London Globe*). They salute their superiors by taking off their hats and thrusting out their

tongues three times. The people say the climate differs every few miles. The punishments are very severe. No matter whether the crime be grave or trivial, the matter great or small, all offenders, when caught, are tied up in a dark room with all their limbs bound, and kept there until dragged out for trial. Sentences of death are carried out by binding the criminal to a pillar and shooting at him with muskets and bows in a contest for drink, by taking him to a cave swarming with scorpions and allowing the latter to sting him, or by handing him over to be divided and eaten up by savages of the U country. They put their dead in bags made of hides, which they suspend for seven days from the ridge poles of their dwellings, while Lama priests chant the liturgy, and afterwards they are carried to mountain peaks, where the flesh is cut into thin slices and thrown to the dogs to eat; this is called the earth interment. The bones are pulverized, made into pills about the size of beans and given to eagles to eat; this is called sky interment. The sick do not take medicine, but are placed in the scorching heat of the sun with their bodies daubed all over with butter.

A GIRL'S TOILET ARTICLES.—A sensible girl will not keep a lot of cosmetics and drugs on her toilet table, but there are a few articles she should always have in a convenient place, (says the *Auto-Adulteration Journal*). She should have an array of glass stoppered bottles containing alcohol, alum, camphor, borax, ammonia and glycerine or vaseline. A little camphor and water may be used as a wash for the mouth and throat if the breath is not sweet. Powdered alum applied to a

fever sore will prevent it from becoming very unsightly and noticeable. Insect stings or eruptions on the skin are removed by alcohol. A few grains of alum in tepid water will relieve people whose hands perspire very freely, rendering them unpleasantly moist. A few drops of sulphuric acid in the water are also beneficial for this purpose, and are also desirable for those whose feet perspire freely. We should always recommend care in the use of scented soap; in many cases the perfume is simply a disguise for poor quality. A good glycerine or honey soap is always preferable. Of course, one may rely on scented soap from a high manufacturer, but it costs more than it is worth. In addition to the soap for bathing, white castile should be kept for washing the hair. Occasionally a little borax or ammonia may be used for this purpose, but it is usually too harsh in its effects.

CARRY YOUR OWN SOAP.—‘Among traveling men,’ said a physician recently, “at least one in fifty has a skin disease of a more or less serious nature, and its cause may almost invariably be traced to hotel soap. Every person who has had occasion to be a hotel guest, no matter where, is familiar with the much-worn cake of soap that lies in wait for him on the washstand, sometimes in a not over clean soap dish, and frequently glued to the cover of the stand, according to the whim of the chambermaid. You haven’t the slightest idea in the world who used the soap last, and very few persons ever give the matter a thought. It would be an easy-going individual, and one singularly indifferent to considerations of cleanliness, who would for a moment think of using a towel that

might have been used by the previous occupant of a room at a hotel, but the instances are rare where the same guest will hesitate to use the soap he finds in the room, although it may scarcely be dry from the ablution of the last person who used it. The traveling man does not stop to think that the hotel soap is unexcelled as a distributor of skin diseases, and frequently those that are difficult of eradication. The man who stops habitually at hotels here, there and everywhere about the country, and does not carry and use his own soap, deliberately courts the contracting of what may be a most distressing and offensive malady.”

THE INFLUENCE OF A BETTER WATER SUPPLY upon the health of a community is remarkably illustrated in the experience of the town of Havre de Grace, Md. In times past the only available water-supply was from the wells within the town limits, and for many years the town had been notorious for the prevalence of malarial diseases, usually ascribed to the situation of the town on the banks of the Susquehanna River, and to the fact that it lies within a so-called malarial district. In 1883-84 water works were built and the supply taken from the Susquehanna River, and the use of well water was abandoned. As an immediate consequence, for which he can in no other-wise account than by the change from well to river-water, Dr. Cochran, the leading physician of Havre de Grace, reports that whereas three years ago he usually treated about seventy-five cases of shaking chills daily, he now has scarcely a single case. The town site is certainly the same, and the river, tide water, and natural conditions remain unchanged; but the one

change is that this town of several thousand inhabitants has suddenly, upon the introduction of a better water-supply become singularly free from the one special disease which was so lately and for so long a time previously prevalent. Account for it as you please, the results at Havre de Grace are well worth noting by other towns in the United States which now experience what that town did in the past, and by a similar remedy they may meet with similar relief.—*Engineering News*.

LITTLE ONES IN SPECTACLES.—The number of children who wear spectacles has become a serious object of remark (says the *Boston Herald*). That a radical wrong exists somewhere when children only 4 years of age are thus hampered for life, is only too palpable, but whose the blame, and what the remedy for this evidently increasing affliction? Are future generations to be sans eyes as well as sans teeth? The defects in vision necessitating spectacles are inherited, or infants scarcely able to read would not be hurried to opticians and fitted to glasses that must bother them while they live. Oculists give many sensible reasons for this weakness of the optic nerves. But no one impresses the necessity of care in the management of eyes until the damage is done, and then it is too late.

Young mothers who cover the baby's face with a veil, or who wear spotted lace against their own eyes, and who allow their children to read by insufficient light, are laying up trouble for themselves, though oculist and optician will be better off for their criminal ignorance. As to the schoolrooms, where children spend so many hours of the day, do parents ever ask or know how they are lighted, and wheth-

er the scholars face windows, and whether they are obliged to strain their eyes by blackboard exercises in half lights. A little precaution in the use of the eyes, and some knowledge on the subject of improper lighting, would be a pound of cure in this matter of spectacles.

UNCLEAN VILLAGES.—I am personally quite familiar with this subject from actual observation in many of the cities and towns in the States of Pennsylvania, Maryland, Virginia, New York, the Dominion of Canada, Louisiana, Mississippi, and I may add Florida also.

I know that the yards attached to houses are for the most part, from one hundred to one hundred and fifty feet deep, more or less, and are generally surrounded with decaying board fences eight feet high and these enclosed yards have been, as a rule, the receptacles for all the refuse matters of families for a long time. Thus it will readily be seen that they affect the air of those dwellings which are near to them, as well as those to which they are attached.

From an eminence in the State of Mississippi I once beheld a beautiful village, which, when seen in the early morning, with cluster of roses and creepers covering the roofs of its houses, looked like a fairy city of enchantment. Who would have supposed, from the distance at which I stood, that it was then the abode of a deadly yellow fever pestilence? Its board-screened yards, undrained, level and water-soaked, were filled with things offensive and useless, which sheer carelessness had allowed to accumulate.

Its cemetery was daily being filled from no other cause than the neglect

of its inhabitants. It may be answered therefore that cities and towns especially in a warm climate, which are built and kept in a manner similar to what has been described, cannot be said to have come up to the standard of continued cleanliness.—*Dr. W. C. Van Bibber, Prevention of Yellow Fever.*

ONE SECRET OF HEALTH.—An old physician, being once appealed to for some general, comprehensive rule for the preservation of good health, replied ; “Keep clean.” Cleanliness, from a medical point of view, generally means the absence of noxious germs. The laity generally comprehend in the term freedom from foreign substances, while the psychologist and moralist have reference to the purity of mind and soul. All these combined would form the first principle of good health. Freedom from all filth with reference to the body and its surroundings, freedom from contamination of mind and soul, would make the individual not only free from material pollutions, but would inspire him with a sense of cleanliness and glorify the consciousness of living. There is a meaning in that word “clean” that penetrates beyond things seen and touches the mental and spiritual nature of humanity. Cleanliness in a material sense may not abhor dissipation and debauches which oppress life with a sense of impurity, vitiating the sources of health and impairing its enjoyment. “Keep clean,” is an admonition carrying with it an inspiration which not only invigorates life, but makes it enjoyable and beautiful. Cleanliness brings not only comfort and health, but it adorns living, gives existence a charm, imparts consciousness of life, real enjoyment, thought and feeling of

existence, the purpose and sanctity of living.—*Exchange.*

CRIMINAL NEGLIGENCE.—No man is entitled to a home unless he can make that home happy and healthful. He has no right to be the means of bringing misery to others or leave posterity the legacy of ill-health or constitutional weakness. It is the duty of all to be healthy, and so observe the laws of hygiene that they may contribute the full measure of their individual well being to the public good. His indifference or neglect of health laws and the observance of the sanitation of his home is not only a crime against himself, but the infliction of a wrong on the public and a burden on posterity.

In this country, with its plan of society and intercourse, no family is isolated. Whatever conditions may produce disease in one family are often responsible for sickness in others. Cases are recorded where disease has had its origin traced to very remote causes, both as to time and place, and these causes have been found to be the result of neglect in the proper care of the home. The fact that such cases are not always found in the homes of the destitute and ignorant is evidence that in families of the well-to-do and cultured there is a want of the observance of the simplest sanitary precautions, which, we are constrained to believe, results more from neglect and indifference than from ignorance of the means to be employed.—*Fourth Annual Report of the Kansas State Board of Health.*

THE HYGIENIC ADVANTAGES OF COUNTRY LIFE.—The *Popular Science News*, for February 1889, has the fol-

lowing to say of country life :—" It is not, however, with the social or economical side of the subject, but with the hygienic effects of the conditions of modern life that we have to deal, and the first point to be noted is that many of the conditions of life in cities are *unnatural*. The wild animal in a menagerie soon droops and dies, and man, whose whole system is adapted to a free and active existence in the open air, cannot submit to the requirements of city life without more or less injury. The city dweller breathes in air more or less impure, his opportunities for exercise are more or less limited, the constant noise and disturbance must affect his nervous system to a greater or less degree, and the greater competition and intensity of the struggle for existence, while it necessarily develops his intellectual faculties to an unusual extent, does so at the expense of his bodily welfare. And the hygienic conditions in the country are not in every case superior to those of the city. The average farm house is not by any means a sanitarium. Often imperfectly constructed, it is an insufficient protection against the cold and storms of winter, while a damp cellar filled with decaying vegetables, a sink-drain discharging upon the surface of the ground directly under the kitchen window, and a shallow well in close proximity to the barn-yard or out-house, often furnish an abundant crop of typhoid fever, diphtheria or consumption. It must be remembered, however, that all these sources of danger can, in the country, be easily avoided at a small cost. A dry, clean cellar is but a matter of a few hours extra work, and a proper disposal of waste, and an uncontaminated water-supply are very simple problems in

connection with the isolated farmhouse. Pure air, agreeable sights and sounds, a sense of personal security, an opportunity for leading a natural, untrammelled life, are within the reach of every dweller in the country, while the inhabitant of a crowded city, no matter how wealthy he may be, can only obtain these advantages to a very limited degree.

THE EYESIGHT OF SCHOOL-CHILDREN.—Dr. De Metz, of Antwerp, has just made known the results of his examination of the eyes of the children attending the primary schools of that city. He examined 7,040 scholars and directed his attention chiefly to the state of their refraction and their chromatic sense. Their ages ranged between seven and fourteen years, so that it is not to be wondered at that he found a very small percentage of myopes among them. Only 2.13 per cent. were myopic, and of these nearly one-half had but one dioptré of myopia. Cohn, on the other hand, found 6.7 per cent of the children in German elementary schools to be suffering from more than one dioptré of myopia. Dr. De Metz thinks that this great difference between the two countries is due to a hereditary predisposition peculiar to the race ; but he also admits that the construction, furnishing, and lighting of the schools have a great influence on the development of myopia. Thus in nine girls' schools which were well lighted there was 1.74 per cent of myopes, as against 4.83 per cent. in three schools badly lighted. And as regards boys, the figures are equally striking—viz: in nine well-lighted schools the per centage was 1.69, as against 2.67 in badly lighted buildings.

Dr. Deneffe recently pointed out the superiority of the chromatic sense in woman, and Dr. De Mets' observations confirm this statement as regards female children. He thinks it is due to the fact that girls are so much more in contact with colors in their needlework, and that thus their color-sense is educated, and he thinks with Dr. Deneffe that the appreciation of colors should form part of the regular school course.—*The Lancet*.

BURIED ALIVE.—The belief that people are ever nowadays buried alive, (says the *Med. Record*) or ever have been, except for criminal or judicial purposes, is one that is widespread, but also one that has very little foundation in actual fact. We venture to say that there are not in history any authentic records of cases of burial alive where the deceased has been carefully examined by physicians, or even by intelligent friends. Of recent evidence of burial alive, there is certainly nothing of value. The *Medical Press and Circular* of May 13, 1874, reported the premature burial of a woman, six hours after supposed death. But no evidence that the woman was not dead is given. The *British Medical Journal* of January 21, 1871, cites the case of an infant that was *nearly* buried alive, but was heard to cry in its coffin. Here, too, the evidence as to the validity of the facts is wanting, while in effect the child was not buried alive. Another recent case occurred at Naples, in 1871. A woman in a state of trance is said to have been buried alive. The court sentenced both the doctor who signed the certificate, and the mayor who permitted the interment to three months' imprisonment for "involuntary manslaughter."

If these and other cases are analyzed it will be found either that there was no proof of the premature burial, or else there was gross carelessness and criminal haste on the part of attendants.

The belief in burial alive should disappear with the belief in ghosts and other "bugaboos." It is, of course, possible that persons may be buried alive through some criminal conspiracy on the part of friends; but such contingencies can be easily avoided in modern life.

IN EULOGY OF WATER.—It is related of the late Emory Storrs that when sitting around a wine table with a number of legal friends he insisted on drinking ice water. They taunted him for his abstemiousness, saying: "What is there in water? You can say nothing for it." Picking up his glass, he exclaimed:

"How do you expect to improve upon the beverage furnished by nature? Here it is—Adam's ale—about the only gift that has descended undefiled from the Garden of Eden! Nature's common carrier—not created in the rottenness of fermentation, not distilled over guilty fires! Virtues and not vices are its companions. Does it cause drunkenness, disease, death, cruelty to women and children? Will it place rags on the person, mortgages on the stock, farm and furniture? Will it consume wages and income in advance and ruin men in business? No!

But it floats in white gossamer clouds far up in the quiet Summer sky, and hovers in dreamy mist over the merry faces of all our sparkling lakes. It veils the woods and hills of earth's landscapes in a purple haze, where filmy lights and shadows drift

hour after hour. It piles itself in tumbled masses of cloud-domes and thunderheads, draws the electric flash from its mysterious hiding places, and seams and shocks the wide air with vivid lines of fire. It is carried by the winds, and falls in rustling curtains of liquid drapery over all the thirsty woods and fields, and fixes in God's mystic Eastern heavens His beautiful bow of promise, glorified with a radiance that seems reflected out of heaven itself.

It gleams in the frost crystals of the mountain tops and the dews of the valleys. It silently creeps up to each leaf in the myriad forests of the world and tints each fruit and flower. It is here in the grass blades of the meadows, and there where the corn waves its tassels and the wheat is billowing ! It gems the depths of the desert with the glad green oasis, winds in oceans round the whole earth, and roars its hoarse, eternal anthems on a hundred thousand miles of coast ! It claps its hands in the flashing wave-crests of the sea, laughs in the little rapids of the brooks, kisses the dripping, moss-covered, old oaken well buckets in a countless host of happy homes !

See these pieces of cracked ice, full of prismatic colors, clear as diamonds ! Listen to their fairy tinkle against the brimming glass, that sweetest music in all the world to one half-fainting with thirst ! And so, in the language of that grand old man, Gough, I ask you, brothers all, would you exchange that sparkling glass of water for alcohol, the drink of the very devil himself ?

A VALUABLE CONTRIBUTION.—The Secretary of the State Board of Health of Michigan has just issued his six-

teenth annual report. The first part of the report consists of a compilation of meteorological conditions, and a contribution to the study of the causes of sickness, based on weekly reports of sickness by physicians in the State.

Probably the most important article in the reports is a paper by Dr. Baker in which reports of sickness and meteorological conditions are so grouped as to show the relation of certain meteorological conditions to diseases of the lungs and air passages. This paper not only presents evidence concerning these diseases in Michigan, but also in the United States army, in the native troops of India, and in London, England, for a period of thirty years. These facts, gathered over wide areas, seem to show that influenza, tonsillitis, bronchitis and pneumonia have one controlling cause, viz., the inhalation of cold, dry air. The paper explains the order of succession of the cold weather diseases from a simple coryza, or common cold, to pneumonia.

Tables and diagrams are also presented showing that a few of the communicable diseases, which, as a rule, gain access to the body through the air passages, are quantitatively related to the atmospheric temperature, almost invariably rising after the temperature falls and falling after the temperature rises. Dr. Baker's explanation of this is that the albuminous exudations which result from the inhalation of air colder than usual supply a place favorable for the reception and reproduction of the specific germs of these diseases.

CONSTIPATION OF INFANTS.—Prof. Parvin recommends, as a simple expedient, rubbing the abdomen with a little sweet oil.

THE PERILS OF YOUTHFUL PRECOCITY.*—There is perhaps no condition of childhood that parents are more delighted with than brilliancy—precociousness. They are delighted to show off the smart sayings and doings of their bright child, and regard themselves as specially fortunate in having such a child; and we have more than once noticed that such a child, even without the least desire on the part of the admiring parent to show partiality, is paraded before company, assigned a place at concerts to sing or to “speak” and allowed to hear the flattering comparisons between it and its less fortunate (?) brother or sister.

And yet it is a matter of sincere concern that many such children—a much larger per cent than of those less brilliant—die early, or if they live to adult age, and to complete their education, live miserable lives, because of shattered nerves and enfeebled bodies generally. This result is generally laid at the door of the school teacher, and the methods of instruction prevalent. And yet the fault is not always, nor perhaps in the majority of cases, with the teacher, nor because of unhealthy conditions of the school room. The parent or guardian recognizing the precocity of the child is proud to make the best of it. It is sent to school at too early an age, progresses rapidly, and is crowded from grade to grade, the parent pleased to be the father or mother of such a promising child; and the teacher, always anxious for the best results from his or her labors, is flattered with the rapid advancement of the pupil, and stimulated by the grateful praises of the parent. The parent and the teacher constitute the upper and

nether mill stone, and the poor child is the grain between. The result is, the child is advancing rapidly intellectually, but while the poor brain is overstimulated, the other organs are deprived of needed stimulus. There is headache, neuralgia, pallid features. The child is fretful, peevish, nervous, easily excited, and often inflammatory affections of the brain supervene, and the child falls an early victim to all the terrible consequences of excessive brain stimulation. If as girls, they live to assume the duties of wifhood and motherhood, they find themselves wholly unfitted for their duties. We would not intimate that all bright children are hurt by study, or are feeble in body and incapable of promotion. Fortunately there are many bright, precocious children, who are of strong physique—have a fund of good humor, and are capable of rapid promotion without such physical demoralization as is referred to. What we insist upon is greater discrimination, and better judgment on the part of teachers and parents in dealing with those precocious boys and girls who are of that highly sensitive nature so often noticeable among children. They have bright minds, are of delicate nervous temperaments, and like the spirited steed, while they chafe under restraint, are wild and impetuous under the least stimulus.

The headaches they get while at school, their nervous and excited manners are indices of danger—prognosticate danger in the future, and demand thoughtful inquiry on the part of teacher and parent as to the cause, and the prompt application of the remedies indicated.

*From the *Bulletin of the Iowa State Board of Health*.

STATE BOARD OF HEALTH

AND

VITAL STATISTICS,

OF THE

COMMONWEALTH OF PENNSYLVANIA.

OFFICERS AND MEMBERS.

PRESIDENT,

DAVID ENGELMAN, M. D., of Easton.

SECRETARY,

BENJAMIN LEE, M. D., of Philadelphia.

MEMBERS,

PEMBERTON DUDLEY, M. D., of Philadelphia.

DAVID ENGELMAN, M. D., of Easton.

J. F. EDWARDS, M. D., of Philadelphia.

J. H. McCLELLAND, M. D., of Pittsburg.

HOWARD MURPHY, C. E., of Philadelphia.

GEORGE G. GROFF, M. D., of Lewisburg.

BENJAMIN LEE, M. D., of Philadelphia.

PLACE OF MEETING,

Supreme Court Room, State Capitol,
Harrisburg, unless otherwise ordered.

TIME OF MEETING,

Second Wednesday in May, July and Nov.

EXECUTIVE COMMITTEE,

PEMBERTON DUDLEY, M. D., Chairman.

HOWARD MURPHY, C. E.

JOSEPH F. EDWARDS, M. D.

BENJAMIN LEE, M. D., Secretary.

Place of Meeting,

(Until otherwise ordered).

Executive Office, 1532 Pine St., Philad'a.

Time of Meeting,

Third Wednesday in January, April, July
and October.

Secretary's Address,

1532 Pine Street, Philadelphia.

Bureau of Registration and Vital Statistics.

Department of Internal Affairs,
State Capitol, Harrisburg.

*State Superintendent of Registration of
Vital Statistics.*

BENJAMIN LEE, M. D.

SPECIAL REPORT.

TWELFTH REGULAR MEETING OF
THE STATE BOARD OF HEALTH
OF PENNSYLVANIA.

The twelfth meeting of the Pennsylvania State Board of Health was held at the Hotel Anderson, Pittsburgh, Pa., May 30th, 1889, at 11 o'clock in the forenoon.

The following members of the Board were present during the session, viz: Dr. David Engelman, President; Dr. J. H. McClelland, Dr. J. F. Edwards, Dr. Pemberton Dudley, Dr. Geo. G. Groff, Howard Murphy, C.E., and Dr. Benj. Lee, Secretary,

The minutes of last regular meeting held at Harrisburg, November 18th, 1888, were read and confirmed, the minutes of special meetings held at Philadelphia, November 30th, 1888, and at Harrisburg February 27th, 1889, were also read and confirmed.

The Secretary presented his report which included the following items:

An epidemic of Typhoid Fever in the McAllisterville Soldier's Orphan School, including letters from the principal and from Sanitary Inspector Sibbett, the letters showing that the water had been contaminated by privy contents, and also by air pollution.

The report recommended that the soil around the wells for a depth of two feet and a radius of ten feet be replaced by impervious clay, and surface and privy drainage diverted therefrom. Also isolation of the sick and disinfection of the hospital. These were ordered by the Executive Officer of the Board. The total number of cases were forty-two, of which two were fatal.

The report was accepted and the Secretary's action approved.

An out-break of Diphtheria at New Bethlehem, report of Sanitary Inspector Free thereon. Dr. Free recommended the taking of all needful precautions, and suggested the formation of a Local Board of Health, taking the State Board of Health's model ordinance as its basis.

Resolved, The same be accepted and approved.

A report from Sanitary Inspector McIntire, showing that numerous families were affected throughout Lehigh County with Diphtheria was read.

At Emaus there were seventy-five cases

and eleven deaths, and no precautions were adopted.

At Macungie there were seventeen cases reported and four deaths.

At Milford there were four cases reported and one death.

At Alburtis there were forty-eight cases reported and eleven deaths.

At Breinigsville, in one family there were six cases and three deaths, in another four cases and one death, making in all 154 cases and 31 deaths.

The Secretary read copy of letter he had addressed to the Chief Burgess of Emaus, declaring the disease epidemic, and suggesting measures for its suppression.

Resolved, Report be accepted and Secretary's action approved.

An epidemic of Small-Pox at Cameron Chute, near Emporium, reported by Sanitary Inspector Free. Dr. Free had established a quarantine station, had vaccinated the people of the infected district, and succeeded in stamping out the disease and preventing its spreading to other localities.

A serious outbreak of Small-Pox at Nanticoke, reports of Sanitary Inspector Taylor and the Secretary of the Borough Council thereon were read. From a report of Dr. S. L. Holley, it appeared that 1,005 persons had been vaccinated. There were nine cases of the disease in the family of the Rev. E. R. Hughes, the entire family who had refused to be vaccinated on the 20th of May, 1889. All the other cases have been released from quarantine which had been vigorously enforced, the majority of the cases having been isolated in special hospitals.

Inspector Taylor reports the origin of the disease in three families of Poles, who reached Nanticoke on December 6th, 1888, via Steamer "Rugid," which reached New York, December 2d, 1888. Twelve days later a boy in one of these families was attacked with the disease, from whom the epidemic spread. This was at once reported to the Health Officer at New York by the Secretary of the State Board, who is in daily communication with the health authorities of Nanticoke.

Resolved, The Board accept the report of the Secretary, and that his action, and also that of the local authorities be approved.

The Secretary reported the sanitary condition of Troy, Bradford Co., to be bad,

caused by the pollution of a stream running through the town, the source of the pollution being from a tannery draining into this stream. He had recommended the authorities to construct a sewer through the town to prevent this nuisance.

Resolved, The Secretary's action be approved.

Acting on a report of Superintendent Wett, 124 of the school children of South Bethlehem were ordered to be re-vaccinated by the local board.

Resolved, The report be accepted.

From a report of Special Inspector Drake it appeared that Diphtheria had broken out in a family at Antrim. The Inspector had quarantined the family until they were suitably provided for, thereby preventing a spread of the threatened epidemic.

Resolved, The action of officer Drake be approved.

Resolved, The board now adjourn until 2.30 o'clock this afternoon.

The board re-convened at 2.30 o'clock, when the Secretary's report was proceeded with.

A communication was received from the Jackson & Woodin Manufacturing Co., with regard to a pollution of the Ice supply taken from ponds at Berwick, Columbia Co. Inspector Leiser was directed to obtain samples of water therefrom, and report thereon, as the company stated they required an expert to examine the same. Two specimens were sent to Dr. Cresson, of Philadelphia, who reported that while one sample was pure the other was unfit for consumption and dangerous to health. Thereupon this report was sent to the company with instructions from the Secretary to forbid the use of ice from the ponds.

Resolved, The Secretary's action be approved.

A report was received complaining of a pollution of air at Chester from swine pens there. Sanitary Inspector Atkinson was instructed to investigate the matter, and Chief of Police Newsome shortly afterwards reported that the swine pens had been removed and the nuisance abated.

Resolved, The action of Secretary be approved.

TO BE CONTINUED.

THE ANNALS OF HYGIENE.

VOL. IV.

PHILADELPHIA, AUGUST 1, 1889.

No. 8.

COMMUNICATIONS.

THE KING'S EVIL.*

BY DR. GEORGE H. ROHÉ.

Professor of Obstetrics and Hygiene in the College of Physicians and Surgeons, Baltimore; Member of the Société Française d'Hygiène.

Scrofula is one of the step-children of modern medical literature. So scanty are the references to it in the medical writings of the last twenty-five years that one might be led to include it, with plague and the sweating sickness, among the diseases that have disappeared from the civilized world. While doubtless less frequent than formerly (Macaulay says that King Charles the Second "touched" nearly a hundred thousand persons for scrofula during his reign), it is by no means an extinct disease. No physician can practice his profession long without being frequently brought face to face with individuals in whom the scrofulous taint is an active factor in the production of serious and often fatal disease. Whether obscure or openly manifest, its signs and symptoms are sources of grave apprehension to the wise family doctor, or to the observant surgeon.

"Scrofula," says Professor Hirsch, the great authority on the history and geographical distribution of diseases,

*Read before the Sanitary Convention at Pittsburgh.

"extends over the entire inhabited globe." No country is entirely exempt from its ravages. It is more frequent in large cities, but it also prevails in the open country. In deep valleys, over broad plains, and on the summits of high mountains it shows itself with greater or less severity. In an orphan asylum in Lisbon every third child was scrofulous. In Berlin over one-half, and in Munich two-thirds of the orphans in the asylum are reported to present evidences of scrofula. In certain departments of France the rejections on account of unfitness for military service due to scrofula amount to three per cent. In Italy, Germany, Austria and Great Britain it is one of the most common diseases. In a comparatively recent report from the Shetland islands, scrofula is said to be domesticated in nearly every family. New Zealand, Tahiti and the Sandwich islands have been frightfully ravaged by the disease. From China, Japan and the East Indies all observers report it as extensively prevalent and extremely fatal, especially in children.

In this country, reports of the prevalence of scrofula are not very frequent, but the late distinguished Dr. Samuel D. Gross often expressed the opinion that the disease is very widespread, and that the taint runs through several generations, frequently uprooting entire families. Even so far north

as Alaska, the scrofulous diathesis is very prevalent among the natives and half-breeds.

Among the causes of scrofula, inheritance takes a leading place. All authors refer to this, and it must be within the personal knowledge of every observant physician that in certain families several members present evidences of this permeating constitutional taint.

While it is certain that the scrofulous constitution is inherited in the large majority of cases, there can be no question that the disease may also be acquired in the absence of any hereditary taint in the individual. Poverty and its accompaniments; insufficient food and clothing, overcrowding in living, school, or sleeping rooms may lead to the development of scrofula in children previously in good health, and the offspring of healthy parents.

Scrofula is a disease of youth. It generally makes its first appearance between the ages of three and fifteen years, although it sometimes does not appear until adolescence, or advanced life. Under two years of age it is rare; when it does occur in extreme youth, it generally manifests itself in eruptive diseases of the skin.

There is a popular belief that scrofula is more frequent in those of fair complexion. But no distinct relation exists between the complexion and the prevalence of scrofula. In a population in which blondes are in a majority the greater number of the scrofulous will be found among the fair-haired. On the other hand, where brunettes are the leading type, these will furnish the larger proportion of those attacked. In this country the colored race is

especially prone to all forms of scrofulous disease, and furnishes by far the largest number of scrofulous patients. By "colored," of course individuals of mixed blood are meant, as the pure African has become rare even in the far South.

Although scrofula finds the most favorable conditions for its development among the poorer classes, the children of the wealthy are by no means exempt. In the former, however, the bad effects of the inherited taint are much intensified by the insanitary surroundings amidst which these patients live. Hence, the severer forms of scrofulous disease, such as glandular suppurations and affections of the bones and joints are usually found among the poor.

In persons of the strumous diathesis, very slight exciting causes may determine an outbreak. The various manifestations of the disease frequently appear as sequels of scarlet fever, diphtheria, whooping cough, or measles. Vaccination also sometimes, though rarely causes extensive inflammations of the skin, and glandular swellings and abscesses in children who inherit a scrofulous constitution, but in whom no manifestations of the disease have yet appeared. Vaccination however cannot produce scrofula in an individual who is not predisposed to the disease, or in whom there is no inherited predisposition. In enumerating the causes of acquired scrofula in young children, especial emphasis must be laid upon the use of artificial foods to the exclusion of the natural food of the infant,—the mother's milk. The pernicious habit of dosing babies with anodynes, carminatives and so-called "soothing" syrups, is also

doubtless responsible for the appearance of scrofula later in life.

The close relationship between scrofula and consumption of the lungs has long been recognized. Consumptive parents often beget scrofulous children, and the latter may afterward become tuberculous. In fact, the gravest danger that threatens most scrofulous patients is that their disease may terminate in consumption. Some pathologists, especially among recent writers, go so far as to make no distinction between scrofulous and tuberculous processes, and ignore scrofula altogether. Strong support has been given to this school by the discovery of the bacillus of tubercle in many of the local products of inflammation in scrofulous subjects.

Notwithstanding this, there is good reason to believe that the essential nature of the two morbid processes is different, and while scrofulous patients may, and often do, become tuberculous, the latter termination is happily far from being the invariable one. The presence of the tubercle bacillus in a scrofulous gland or joint does not necessarily indicate that the patient so affected is tuberculous, or will die of consumption.

The manifestations of scrofula are numerous. In its Protean aspects it often puzzles the less expert diagnostician. But, in many cases a single glance is sufficient to indicate the nature of the affection. Among the poor children seeking relief in the dispensary clinics of large cities a characteristic "scrofulous countenance" may often be observed. There is thickening of the lips and nostrils, usually some catarrhal discharge from the nasal passages, redness and inflammation of the edges of the eyelids,

and, at times, a purulent discharge from the ears.

These patients constitute, however, but a small minority of the great family of the scrofulous. A more numerous class is that described by some authors under the name of "pretty scrofula." In these the skin is thin and of a delicate tint, eyes large and brilliant, thin and translucent nostrils, bright red lips and generally precocious mental development. Children who present these characteristics should be well guarded during their school years, as they are especially prone to consumption, abdominal complaints, or brain affections. Overstudy, confinement in a close, ill-ventilated school room, or imprudent exposure in rigorous weather will often be the determining occasion of irreparable mischief in these vulnerable individuals.

The scrofulous constitution manifests itself in eruptions upon the skin, of which eczema, abscesses and ulcers are most frequent and characteristic. Likewise, in catarrhs of the nose, throat and air passages, leading oftentimes to pneumonia and pulmonary consumption. Chronic enlargement of the tonsils is also a frequent consequence of the catarrh of the throat. Inflammations of the eyes, eye-lids and ears also occur often, and the latter not rarely lead to deafness, or even inflammation of the brain and death. A chronic discharge from the ears in a child should always be regarded as a signal of grave danger and be promptly treated.

In nearly all scrofulous individuals, the lymphatic glands, especially those about the neck become swollen, inflamed, and often suppurate. The appearance of these cases is characteris-

tic and has given the disease its name.* Such suppurating glands have a tendency to continue for years and are followed by extensive scars which disfigure the countenance of the patient to a still greater extent.

The scrofulous diathesis finds its most serious expression in the affections of the bones and joints. What is commonly known as "hip disease" is, in most cases, scrofulous destruction of the hip joint.

The gravest forms of scrofulous disease are those cases in which the bones of the spinal column are attacked. Here the morbid process destroys the bony framework which maintains the body in the erect position, and by compression of the spinal cord produces paralysis with its discomforts and often fatal consequences. The application of the "plaster of Paris jacket," the brilliant and beneficent device of Dr. L. A. Sayre, enables many of these poor sufferers to live along in comfort when compared with their former condition.

For seven centuries in England, and for eleven in France, the divine touch of kings was believed to be a sovereign cure for scrofula; hence the name,— "the King's Evil." Dr. Johnson is said to have been the last person touched in England. This occurred in 1772 when the great literary autocrat was in his third year. Possibly the sex of the sovereign (Queen Anne) may be responsible for the lack of good resulting in this case. "At all

events" says Carlyle "poor Johnson had to go about girt with continual hypochondria, physical and spiritual pain."*

No cures have been found for scrofula in the multitude of new drugs discovered by physicians in the last third of a century. So far as the purely medicinal treatment of scrofula is concerned, the profession stands exactly where Lugol left it, forty years ago. Cod liver oil, iron, iodine and quinine exhausts the list of our pharmacopœial resources, and even the first of these is rather dietetic than medicinal in its action. The others are most potent and valued medicines, but inadequate for the cure of the many manifestations of the strumous dyscrasia.

The question may very properly be asked here, whether no advances in the treatment of scrofulous diseases have been made in recent years? The answer is that, on the contrary, measures for the cure of scrofula have within the recent past been widely developed. In the first place the experiences of surgeons have shown that operative interference has been successful in a large number of cases in arresting the evil consequences of glandular suppuration, or the ulceration, of bones and joints. With the comparative safety conferred by antiseptic precautions, surgeons attack scrofulous diseases with much less hesitation than formerly. Wherever the strumous process is accessible to the surgeon's knife, much may be hoped for from its bold but judicious use.

But what concerns us here, more than the cure of established or advanced scrofula, (which is the affair of the physi-

*The name *scrofula*, from *scrofa*, a sow, equivalent to *Choiras*, a pig. Usually believed to have been so named because swine are supposed to be subject to a similar complaint. It is more probable however that the name was given to the subjects of the disease because the swelling of the glands when well developed gave the patient's neck an appearance resembling that of a pig. The word *scrofula* is first met in medical literature in the writings of Constantinus Africanus, who flourished in the eleventh century. He was one of the most noted authors of the famous medical school in Salernum.

*Carlyle: The Hero as Man of Letters.

cian and surgeon to whom I am not prepared to offer any advice upon this subject,) is what measures can be relied upon to prevent the disease in one predisposed, or to restrict its ravages in one in whom the taint has already found expression. In other words, what hygienic measures can be effectively used against scrofula?

Bearing in mind the causes of scrofula, as before mentioned, the measures rationally indicated for its prevention are such as will remove, or mitigate the influence of those causes.

If it is true, as Dr. Holmes suggests, that the education of a child should be begun several generations anterior to its birth, it is no less true, that the preventive treatment of scrofula should begin before the strumous individual is born. Healthy fathers and mothers, living rationally with wholesome surroundings are not likely to be procreators of weakly, scrofulous children, while, on the contrary consumptive, ill-nourished parents, living in violation of sanitary principles can hardly claim the privilege of having healthy offspring. It is necessary therefore, that prospective parents should be healthy,—or at all events to try and be as healthy as they can.

But even when a child is born with the scrofulous taint, the latter does not necessarily find expression, if proper care be taken of it during the periods of infancy and childhood. The hygiene of childhood should be the especial study of all mothers. I may say that I know no more helpful publication to this end than the magazine "Babyhood," published in New York, under the editorship of Dr. L. M. Yale and Marion Harland.

The discussion of the questions of infant feeding, proper clothing, venti-

lation of living and sleeping rooms, school hygiene, (including under this heading not merely the construction, heating and ventilation of school buildings, but also the proper methods of, and the time to be devoted to study, etc.,) physical training, occupation, etc., would carry us too far from the special topic under consideration. I am glad to find also that the programme of this meeting includes papers on several of these subjects which will doubtless receive fuller elaboration than I could give them here.

Premising then that good food, pure air, appropriate clothing, sanitary surroundings and a right mode of living generally are especially important to those predisposed to, or affected by scrofula, I venture to call your attention more particularly to a remedy which possesses especial power in preventing the development of scrofula, and in arresting it when it has already appeared. This efficient remedy, the most puissant at our command, is prolonged life at the seashore. This was recognized so long ago as the middle of the last century when Richard Russell wrote a dissertation "Concerning the use of Sea Water in Diseases of the Glands," (Oxford, 1750). In 1796 the first special hospital devoted to the treatment of scrofulous diseases was erected at Margate, an attractive sea-side resort 63 miles from London. This institution is still in existence, and a few years ago received a large endowment from the late Sir Erasmus Wilson, a distinguished London physician, to whose munificence the English metropolis is also indebted for the Egyptian obelisk which graces the Thames embankment.

The largest sea-side hospital for the

scrofulous is on the beach of Berck-sur-Mer in France. The *Hôpital Maritime*, called *Hôpital Napoléon* during the Empire, has a capacity of 734 beds, and is open the year round. The beginnings of this magnificent institution were of the most humble description. In 1857, a Dr. Perrochaud, with the aid of a sturdy woman of the people, the Widow Duhamel, sent daily a number of poor afflicted children from Grosfliers to the beach, where the little patients were bathed in the sea and allowed to romp and play in the warm sand. The exploits of the benevolent widow of Grosfliers are celebrated in the following verses which appeared some years ago in a London magazine :

"There was an old woman, she dwelt by the sea,

And a very good little old woman was she.
She took boys and girls that were sick, for her pleasure,

And told them to search on the beach for a treasure ;

If they had'nt the strength so far to repair,
Her wheelbarrow merrily trundled them there.

They paddled and paddled and frolicked,
and then

Her wheelbarrow trundled them all back again.

'And as to the treasure, my dears,' she would say,

'Twill be found sure to-morrow, if not found to-day ;

The treasure of treasures, the wealthiest of wealth,

The jewel of jewels, my darlings, is health.'
So she gave them good broth with plenty of bread,

She wiped all their noses and put them to bed."

The great benefits derived from the treatment in this great hospital are shown by some statistics. From 1869 to 1882 there were treated in the hospital 4,692 scrofulous children. Of

these 3,321 were cured, 148 improved, 127 unimproved, and 757 withdrawn by their parents or guardians. The number of deaths amounted to 339, or 7.2 per cent.

Belgium has a model hospital for scrofulous children at Middelkerke. It has a capacity of 300 patients. It was founded by the Vicomte Roger de Grimberge. Denmark has one at Refsnæs, Russia one at Oranienburg, Germany several in the Islands of the North Sea, the largest being at Norderney, and Italy and Austria are not only not behind, but the former country in advance of other nations in this benevolent and laudable work. In France several large endowments have recently permitted the construction of additional sea-side homes, the most important of which are at Nice, Cannes, Arcachon, and at Nantes.

Besides these regular hospitals which are open all the year round for the reception of patients, and to each of which a competent staff of physicians and surgeons is attached, there are in Europe a large number of sea-shore and mountain refuge stations to which scrofulous children are sent in the summer time only. In Italy alone there are about twenty such sea-shore establishments, the first of which was opened in 1856 at Villa Reggia. In twenty six years over 50,000 poor or sick children had received the benefits of these humane institutions. A recent correspondent writes as follows of the sea-side hospitals in Italy.*

"The infant mortality of Italy is still a slur on her civilization, and among her children who survive the bad upbringing in which defective nutrition is only one among many culpable characteristics, osteomalacia and rachitis are fearfully common. Concurrently with better education and sounder knowledge as to the management of infancy,

there is also (it is satisfactory to note) a vigorous movement throughout the peninsula in favour of seaside hospitals, where the little sufferers from parental ignorance or neglect are admitted as patients, and their physical rehabilitation attempted under conditions most favorable to success. The benevolent among the laity are co-operating with the profession in establishing these institutions on every point of the seaboard within easy distance of a great city, and those of them already in working on the Latin shore—started, it is fair to say, some thirty years ago by the Papal Government—are yielding signal proofs of their salutary effect. Year by year the number of cases relieved, if not actually cured, increases in proportion to the admissions; while as to these latter there is also evidence that, though rachitis may not itself be getting more common, the number of those who are made to benefit by the hospitals is distinctly rising. In 1855, for example, the admissions into the seaside hospitals of the Roman province were 517 in all; while in 1887 they were 667. This public recognition of the good effects of these institutions is manifested in many ways—the railway companies, for example, giving free tickets for the transport of the little sufferers from city to seaside, and financial houses like the Banca Nazionale subscribing liberally to keep the appointments, the working, and, above all, the dietary of the hospitals at as efficient a pitch as possible. Under the auspices of the Marchese F. Berardi, the official report of the ‘*Ospizi Marini*’ of the Latin shore has just been brought out, and its details contain much that merits the attention of physicians in the British Isles, where such hospitals might be generally introduced or promoted with great advantage to the ill-fed, ill-developed children of our industrial centres. As I write, I receive the announcement that Palermo, mainly owing to the energetic initiative of Dr. Albanesi, Professor of Surgery in her University, is also to have her ‘*Ospizio Marino*’—a much-needed institution when we recollect the depths of ignorance as to the laws of health, personal and public, revealed in the recent cholera visitations in Sicily. Thanks to the skilful finance and civic liberality, seconded by the gratuitous tickets of the railway and steam-

boat companies, the institution starts under excellent auspices.”*

In the United States, so far as known to the writer, no special hospitals exist for the treatment of scrofulous diseases. There are a number of voluntary charitable organizations providing sea-side or country homes for sick children in summer, but these do not contemplate giving special medical or surgical attention to strumous patients.

Perhaps the Seashore House at Atlantic City comes nearer to what such an institution should be, but the practical philanthropy of wealthy Americans which seeks outlets in so many directions, sometimes of doubtful good, perhaps, does not yet seem to have been turned in this direction. We have need in this country of permanent places of refuge at the seashore where the children of the poor who inherit a scrofulous constitution, or are afflicted with its active manifestations can be sent for treatment under the most favored conditions. The middle Atlantic Coast offers many exceptional localities where such homes could be advantageously established. I regard it as an especial privilege to have been permitted to bring this matter to your attention, and I trust some practical results may follow.

PAINTING FLOORS.—A French writer observes that painting floors with any color containing white lead is injurious, as it renders the wood soft and less capable of wear. Other paints without lead, such as ocher, raw umber, or sienna, are not injurious.

*London Lancet, May 12, 1888.

ADULTERATION OF FOOD AND DRUGS.*

BY PERCY F. SMITH,
Of Pittsburgh.

Statistics show that the average cost of food per week, for an individual in the United States, is *only one dollar and sixty cents*. It would be natural to suppose, therefore, that every manufacturer of food products in our country would honestly endeavor to provide for the masses *pure*, and nothing but pure food. Added to cheapness there is not another nation in the world that produces such a variety from which to select, and to this fact may be attributed, perhaps, the largest amount of adulteration.

At the outset, however, I wish to remark that the reports of adulteration in food products are greatly exaggerated. For instance: It is not true that oleomargarine is made of defunct canines, felines, old gum shoes, tin cans, tooth brushes, tooth combs, etc.; nor is it true that all adulterations in food products are poisonous or necessarily hurtful, though it must be understood that I heartily denounce *all* adulterations.

Aside from special articles such as condiments, or so called fruit jellies, coloring matter used in candies, syrups for soda water, etc., adulteration of food is not largely a sanitary question. In these there is danger; in other articles it is purely a commercial question. The most prominent adulteration is the use of salicylic acid as a preservative, which, according to the best information at hand, has been prohibited in both Germany and

France, and ought to be in America.

Exaggerations exist in every trade and profession—even in the ministry—for it is recorded that a dominie given to stretching the truth, when rebuked for it, penitently said, “he had shed bushels of tears over his misfortune.”

These exaggerated reports may also be compared to the complaining drummer on the train, who said to the conductor, “When you get ready to clean the drugs and chemicals out of that water cooler, let me know. Perhaps I can buy a half ton of copperas at wholesale.”

The adulteration of food and drugs may be classed under two heads, viz: Those purely of a commercial character, and those that endanger health. The former has been defined as a sin against the *pockets* of the people—the latter a crime pure and simple, *against the people*. There is a diversity of opinion as to how such offenders should be punished, which I might notice here.

Dr. Newton, of New Jersey, says, “State laws and the education of the people are the best methods to control this wrong of adulteration.” But this position is strongly controverted, and it is contended that the remedy lies with Congress; that adulterations, harmful or otherwise, will go on until the National Legislature interferes and forbids the importation of debased and impure food, and also prohibits their manufacture in this country.

The adherents of the State management theory argue that the Government hasn’t any jurisdiction in the matter over the States, and assert that relief can only be had through the State Boards of Health exercising police powers.

*Read before the State Sanitary Convention at Pittsburgh, statistics; etc., having been compiled from the *Penna. Grocer*.

I think I should say in passing that while I heartily favor the control of this matter by State Boards of Health, the Oleomargarine law and the Interstate Commerce law pretty effectually settle the question of the jurisdiction of the U. S. Government over the States. Indeed, I may also say that at each session of Congress for the past three or four years, legislation has been introduced to prohibit the importation of impure and debased food, but an examination of the measures shows conclusively that they do not fully compass the evil, and that additional legislation, namely, by the States, is absolutely necessary to correct the villainy of adulteration.

Arguing against the question of jurisdiction is about on a par with the distinguished gentleman behind the prison bars. His lawyer assuringly said to him, "But I tell you they can't put you in jail for such a thing." "But, blank it," said the prisoner, "I am in jail all the same."

What we want is a stringent law of the U. S., to be supplemented by a State law, State and Local Boards of Health with police powers, an Inspector or analyst in every Congressional District, and the co-operation of honest manufacturers, to rigidly enforce the laws relating to adulteration, no matter in what form it may exist.

The greatest danger to the health of the people in the way of impure food comes from the sale of adulterated and impure milk, and I shall merely quote from other authorities further along, to substantiate this allegation.

The quality of food products now being placed in the markets all over the country, is attracting more attention than at any period in our history, and while we mention those which are

fraudulent in their character, commercially, we should look carefully into those which are positively dangerous, so that we may intelligently consider what moral responsibility rests upon us.

Hon. Erastus Brooks, late a member of the State Board of Health of New York, says, "The adulteration of drugs, upon the proper use of which depend health and life, demands the attention of health authorities and of all in any way interested commercially or otherwise, in their prescription or use." "Of 317 samples (of medicinal chemicals) examined by Prof. Chandler and his Assistants in New York, only 11 were found to be adulterated; of 232 samples of vegetable drugs, examined, 85 either did not come up to the regulated standard or were plainly adulterated, and of 110 specimens of powdered drugs, such as ipecac, jalap, orris root, rhubarb and mustard, 46 either in purity or strength failed to meet the required standard. Powdered drugs as a rule have proved the least reliable and satisfactory."

On oils Mr. Brooks says, "Most kinds of oils are adulterated more or less—olive oil in particular."

The same gentleman makes this statement: "Lard cheese is made at 23 factories in New York, from granted patents. 6000 pounds of skim milk, 80 pounds of lard, and 600 pounds of butter, make 500 to 600 pounds of cheese, and 14 per cent. or 70 pounds of the whole is lard. Such cheese is less digestible than when made of milk."

The gentleman quoted is also authority for the statement that "extensive and carefully planned adulterations in butter, alum, borax, barium, curd, fats, flour, gypsum, lard, lead

carbonate, lead chromate, salt and starch, are common."

Injurious adulterations in tea, coffee, milk and spices are also referred to by the same authority.

Bennett F. Davenport, M.D., analyst for Massachusetts, says, "Among the articles of food much subject to adulteration, that of milk is by far of the greatest importance, for it forms the only or principle article of food consumed by a large portion of our infant population during those years when they are least able to withstand any tampering with their nourishment. While not poisonous, such adulterations are criminal, and should be punished accordingly."

On the authority of Dr. H. A. Pooler, of Goshen, N. Y., "the death rate of children under five years of age, in New York, was 3,673 less in 1883 than in 1882, other conditions of the city being the same. The great decline in the death rate was either a coincidence or the result of the inspection of milk, for during 1883 the work of inspection was vigorously and effectively carried forward in that city."

J. Cheston Morris, M.D., of Philadelphia, says, "I think that we may fairly conclude that of the deaths under five years of age in our large cities, at least one-fifth are directly traceable to the inferior milk supply, if indeed this is not too low an estimate."

Then in behalf of helpless infancy let us have stringent laws and Boards of Health empowered to enforce said laws.

I notice the Minnesota Legislature has passed a law requiring all dealers in milk to take out a license and give a bond, the State Dairy Commissioner having full charge of the matter, and

while it does seem severe, such legislation appears to be necessary.

It is Dr. Newton, of New Jersey, who says that most forms of adulteration are sins against the pocket, but occasionally the adulterants are poisonous, either immediately or after continued use. He instances salicylic acid, and thinks that the damage to health inflicted by impure food is a greater evil than the fraud. Both are heinous.

Medical experts have pronounced saccharine, the recently discovered product, said to be many times sweeter than sugar, extremely unhealthful. They say that it is not an article of food, and cannot replace sugar; that it is productive of dyspepsia, having an injurious influence on digestion, and that being unhealthful its use should be prohibited in all articles of food intended for human consumption.

In Europe and in this country also, poisonous or sick cheese has received considerable attention, and in an adjoining county in this State the records show one or two deaths from the eating of poisonous cheese.

Prof. Vaughan, of Ann Arbor, Michigan, referring to cheese, says, "I think that it can be positively stated that any cheese which will instantly and intensely redden blue litmus paper should not be eaten. This is a test easy of application, and every merchant on cutting a fresh cheese should make it. If the cheese is dry a bit of it should be moistened with water and the litmus paper then applied."

Among hygienic facts generally recognized there is probably none better established than that disease and misery among the poor is due to a lack of variety and insufficiency of food. In-

vestigations show that it is in small packages that the greatest amount of adulteration is found. These facts reveal the dark picture of the poor purchasing with their limited means food products from which have been extracted the most nourishing principle, as small packages for small sums of money are alone within the reach of these people.

Ignorance of the existence of a law in our State does not excuse the offender; nor will ignorance of the poison that may be in food relieve dealers of responsibility unless they demand reasonable precaution. A reasonable precaution to my mind would be to use efforts to aid the legally constituted Boards of Health in the discharge of their official duties.

It is everywhere acknowledged that the State is the guardian of the public health, and this concession should settle the question as to who should be empowered to enforce health laws, viz: The State and Local Boards of Health.

If enough money can be appropriated for the purpose, and if manufacturers, wholesalers and retailers combine their forces, and co-operate with the State Boards of Health, the sale of adulterated food will cease.

European countries and some of our own States have laws for the inspection of food products, and a public chemist with assistants. Our State is far behind in this matter. If any of you were here this morning you know why this is: Massachusetts appropriates \$111,000 for the use of her Board of Health, and Pennsylvania \$5000; that is the reason the State of Pennsylvania is so far behind. There should be an analyst in each congressional

district. Dealers in impure food products have little to fear where there is no public chemist.

Congress has enacted laws closing our ports to contagious diseases, but has left them open to impure and adulterated food of every kind. It is to be hoped that stringent laws will soon be enacted for the whole country, not only prohibiting importation but the manufacture of impure and debased food. State laws will follow, and it will soon be discovered whether the governments, national and state, cannot control this slowly increasing evil. Whether the U. S. Government does it or not, I feel sure the State will, through their Boards of Health.

As I have already remarked, a hearty co-operation can be given in this direction by honest manufacturers, wholesalers and retailers, and finally by the consumers; but moral suasion alone will not abate the heartless evil. Laws and their enforcement are required to eradicate the villainy.

Moral suasion in this matter would be about as effective as in the case of the Irishman, who, finding a lager beer glass on a bar, unnoticed by the barkeeper, filled it to the brim with whiskey. Just as he put it to his lips the excited bartender noticed the draught, and cried out, "man, man, don't drink that all at once, it will kill you; it isn't cider; it isn't cider."

But Pat was not to be moved by moral suasion, and swallowing the poison, remarked disdainfully, "Cider, cider, did you say; I would not put that much cider in my stomach for ten dollars."

Moral suasion will not reach unscrupulous manufacturers, such as it is claimed they have up in Michigan. A gentleman in my hearing related this

incident about the aforesaid wolverine State manufacturer :

"There is not one per cent. of the genuine article in the pepper of a certain manufacturer in Michigan, and the way I know it is this," said he, "I put ten pounds of the pepper in ten pounds of the sausage meat, and experts were totally unable to discover the presence of pepper in that meat." The statement evoked considerable merriment when the gentleman said, "We have it on record that pepper in this state (Michigan) has been adulterated 99 per cent., but the case I am hinting at beats the record."

Other stories of pepper have been related to me until I am in grave doubt whether the public wants pure peppers. This doubtful state can only be removed by laws requiring these goods to be commercially pure. I might say, however, in passing, that the doubtful state might be overcome as it was in the case of Brown before the last Presidential election. His small boy annoyed him greatly by asking him what was the doubtful State. He at length replied, "Matrimony is a doubtful state, my son. Ain't it Mrs. Brown?" She quickly replied, "To me it has never been a state at all. It has always been a Terror-tory."

Eminent persons writing upon the question of pure food disclose some singular things.

For instance : A citizen of Michigan discovered in France and Italy cotton seed oil in casks from America, and inquiry showed it was used with olive oil to make *pure* olive oil for export to the United States. No secret was made of this fact. The residue of the mixture is used over there for butter.

I append a few statistics showing adulterations discovered by analysis in

food supplies. Ground coffee, 45 per cent. ; spices, 66 per cent. ; low grades of sugar, 20 per cent. ; teas, 48 per cent. ; syrup 50 per cent. ; milk (when not inspected) 50 per cent. ; cream tartar, 44 per cent. ; baking powder, 44 per cent. ; bread, 2 per cent.

It will thus be seen that while the above adulterations are entirely of a commercial character, they are nevertheless fraudulent, and open the door for the more unscrupulous manufacturers to still further adulterate, and not only so, but to introduce poisonous substances to enrich their coffers, when they can do it without fear of detection or punishment.

But even where the ingredients are not poisonous the State should enact laws to check the frauds, and give long life to our people, for it must be admitted that buckwheat bran, terra alba, or white clay, alum, turmeric for coloring, musty flour, middlings, alum shucks, chicory, and starch will not produce longevity. So far as clay is concerned it is not yet settled that even an ostrich can digest it.

There is nothing nutritious in turmeric or rejected flour, and it is absolutely wrong, nay more, it is a crime, to permit their use for commercial purposes.

Here is what a learned gentleman says of these adulterations : "Rice hulls, oat hulls, etc., are woody fibre, not fit for an animal's stomach, and sickness and death is what adulterations of this character really mean."

The demand of the consumer for gifts with goods, which is growing steadily, as the result of a desire of the masses to get something for nothing, has led to the production of handsomely labelled canned goods, such as oysters, peas, corn, etc., which, if they do

not contain poison, are absolutely worthless as wholesome food. The quality of the food deteriorates in proportion to the alleged (?) value of the gift, and you may conclude this, that if you buy \$50 worth of spices and receive a \$50 music box with the goods, you have \$50 worth of cracker meal and a "wheezy music box." Whole spices can't be ground and sold for five or six cents per pound less than the unground goods cost, and a music box furnished the dealer for the privilege of grinding, and as the amendments to the "Inter-State Commerce Law" make it an offense for a shipper to connive at lower rates than the published tariff, in like manner, to thoroughly correct this evil, we should have a law to punish all who ask for fraudulent goods.

A gentleman in Philadelphia who was once a manufacturer of spices, told me that he had an excellent run on a special grade of black pepper, which was composed of the following ingredients: red African pepper 5 pounds; black pepper 10 pounds; pulverized water crackers 85 pounds; total number of pounds of No. 1 black pepper, when mixed, one hundred. In proof of this another manufacturer says at the close of the war thousands of pounds of "hard tack" passed from the hands of the Government to the spice manufacturers, and under their skilful hands were metamorphosed into pepper.

Clifford Richardson, one of the U. S. Government analysts, says spices and condiments for human food are adulterated to a great extent, but only in a commercial sense. He says: "Of 20 samples of ground cloves examined only two were pure; of cayenne pepper, one out of eight; and of mustard,

ten were examined, but none were pure."

Coloring matter is used in cheese-making says another authority, for the purpose of simulating richness, while in point of fact it damages the article. Indeed it is a question whether or not the ingredients are not actually poisonous. In proof of this may be cited the fatal poisoning in Beaver county. It was only because of the fact that the State has no chemist, and the Board of Health no power, that this terrible affair was not inquired into.

The fatal cases in Philadelphia from eating poisoned buns, about a year ago, for a time stirred up great indignation, but were lost sight of. It would not have been so had the State had a chemist, and a Board of Health vested with power to punish the scoundrels who send death into families in the shape of poisoned food products.

In Philadelphia too last year, through the efforts of the efficient Agent of the Retail Grocer's Association, an Italian peddler was run down while furnishing poor children with rotten bananas. The fruit was sold to the little unfortunates at two for a penny, and was not only rotten but alive with worms. He was fined for peddling without a license, and his occupation broken up. But what a parody on justice! What a shame on our boasted civilization! Had his just deserts been meted to him he would now languish behind prison bars.

This inordinate greed for gain, which gives birth to the fearful habit of selling impure, debased and adulterated food in every and any way, must be legislated upon, and the practice once and forever prohibited under extreme penalties.

We have an old Scotchman up in

McKeesport who ran a dairy and ran it honestly, but he quit the business. He told me the reason he quit the business was because a Yankee came into town and started up an opposition dairy; the Yankee had a fine new wagon, and on the wagon was painted a large pump, and "Spring Hill Dairy," or something like that, and so my friend went out of the business.

I am glad that the dignity of the human stomach is beginning to be recognized, and it will become a leading topic, as soon as the better class of our citizens realize what a crime is being wrought upon the poor, in the form of spurious, unwholesome and debased food.

State laws should be enacted to prevent substitutes being sold as standard goods.

To prevent unwholesome, worthless or debasing substitutes being used to increase weight or bulk, without adding value to the compound, unless they are so labeled, and to prohibit absolutely the use of poisonous substances in food products.

And such legislation, enforced by the State Boards of Health, will secure to the people good, pure, wholesome, and nutritious food.

NOTE ON FERMENTED BEVERAGES OF LOW ALCOHOLIC STRENGTH COMMONLY KNOWN AS "SOFT DRINKS."*

BY HENRY LEFFMANN, M.D.

I have often noted, and with some surprise, the limited attention that is given in sanitary literature and in the proceedings of sanitary conventions to

*Read before the State Sanitary Convention at Pittsburgh, Pa.

the subject of alcoholic beverages. Even such comprehensive considerations of the science as are given in the annual meetings of the American Public Health Association, rarely include more than a passing allusion to it, although occasionally papers of much value appear. This neglect is surely not due to the non-importance of the topic, for there are few, if any, causes of disease more serious than the use of alcohol. While we may view with mistrust and even contempt the assertions and some of the efforts of professional prohibitionists, we cannot deny the general advantages of total abstinence. It is not unnatural that those who are deeply interested in a reform movement will occasionally be overzealous, and that the liability to such zeal will be most marked in causes of greatest and deepest interest. That the movement which is now manifesting itself in various parts of the world, but particularly in English-speaking countries, in opposition to all use of alcohol is a reform movement of great vitality and force cannot be doubted for a moment by any one who is observant of it.

To the question what are the reasons for the general use of stimulants no very positive answer can be made. The argument that such general use indicates a physiological necessity, is entirely without value, for a similar reasoning could be made to justify many habits which are known to be injurious to body and mind. The positiveness with which an opinion in dietetics is asserted by eminent authorities is no demonstration of its truth. We have only to look over the current of medical history for a brief period to see the most opposite views dogmatically asserted. It can hardly be de-

nied that with many persons the use of stimulants is a mere matter of imitation. As soon as a child begins to partake of the regular food of the family the accessory articles, coffee, tea, cocoa or even alcoholic beverages are placed before it. The habit of drinking coffee or tea is a mere dietetic vice, although we may think that we have some recondite physiological basis for it, but it is like the German custom of eating pork, raw, a habit derived by example. The stimulants in common use are mostly agreeable to the palate, and it is in this property that we have the main cause of their extended use. It is not at all to be wondered at that the delightful aromas of coffee and tea should have made them favorites with many nations. Men and women use these articles because they like them and not because of any instinctive demand for them. Some experiments have indicated that raw meat is more digestible than cooked meat, but a knowledge of this fact is not likely to lead to an entire abandonment of roast beef as an article of food.

The chemistry of the formation of alcohol is now well understood. It is no longer regarded as a spontaneous product. It is a process, however, which can be easily brought about, by simple exposure to the air, of liquids containing sugar. If we attentively consider the subject, I think we can give mankind credit for not being given to the use of such beverages wholly on account of the alcohol formed. All alcoholic fermentation is accompanied by the production of a certain amount of carbonic acid, which occupying a large volume gives to the fermenting liquid an agreeable effervescence and pleasant effect. The progress of science has placed in our hands mechan-

ical contrivances which enable us to produce effervescent beverages without the simultaneous formation of alcohol, but such operations are practicable only on the large scale. The home manufacture still is limited to the old method.

In the days of irregular and unrestricted traffic in all classes of alcoholic beverages, now, I hope, happily passed away in this State, but little attention was paid to the character and effects of the so-called home-made beers. Something has been said from time to time by medical writers concerning the domestic wines and brandies made from fruits, but these do not come within the province of this note. I may, however, say, in passing, that all these articles such as blackberry, and elderberry wines are less suitable for use than true grape wine, and that from a chemical point of view the grape is the only wine-bearing fruit. It is, however, with the very light fermented drinks that we are here concerned, those known familiarly under the name of spruce beer, mead, and other fanciful titles. Their production is simple, the fermentation being carried at a low temperature.

The rigidly restrictive language of the new license act has placed the manufacture and sale of these articles on a new basis, and it has been in consequence of some association with the legal difficulties growing out of such sale that my attention has been specially directed to their character. The general ignorance as to the nature of alcoholic beverages is remarkable. I have several times in the course of popular lectures shown the distillation of ordinary lager beer and the alcohol so obtained, and have had persons of apparently fair intelligence express sur-

prise at the existence of appreciable quantities of alcohol in such articles. Still more is it likely that many persons consider that spruce beer and mead contain no alcohol. As a matter of fact the per centage varies from say .5 of absolute alcohol up to 1.5 to 2 per cent. Ordinary beers contain from 4 to 6 per cent. Ambrosia, a light beer, which has figured rather largely in the courts in Philadelphia, contains from 1.5 to 2 per cent, rarely, probably, exceeding the latter figure. An important difference must be noted between the domestic beers and such articles as lager beer, ale and porter. The latter are malt liquors, and their production is a definite chemical process, the results of which are under complete control, in other words they are brewed. The home-made articles are largely hap-hazard products, made without malt, and no more of the nature of brewing than is the making of a light dough by the use of yeast.

Recognizing then the simple chemical character of these beverages, an interesting question arises as to their intoxicating qualities and wholesomeness. What constitutes an intoxicating drink has often been a matter of both medical and legal dispute. The determination of this point does not come into question under the present law, as the license is required for the sale of "spirituous, vinous, malt or brewed liquor or any admixture thereof." The general public opinion is still based on the older consideration. Physiological experiments have rendered it probable that a quantity of absolute alcohol amounting to 1.5 ounces in the 24 hours is the limit which the healthy male adult can use up in the system. If more than this be taken some of it will appear in an

unchanged form in the excretions. We may consider therefore that the consumption within 24 hours of an amount of any fermented beverage containing more than 1.5 ounces alcohol would establish a condition of intoxication in the scientific sense, although the mental and muscular evidences might not be at once apparent. When we bear in mind that one-third at least of the 24 hours is practically obliterated in sleep, we see that we must reduce the limit just given to one ounce and we may say that over this amount of alcohol taken between the hours of breakfast and bedtime will be an instance of alcoholic excess. Now, if we consider lager beer we find that it contains at least 4 per cent. of alcohol, hence twenty-five ounces will contain the limit of absolute alcohol, and since it is quite easy for a regular beer drinker to consume this amount, (about one pint and a half) in the course of the day, a quantity of alcohol beyond the physiological limit can be easily reached. Such beers must therefore be considered intoxicating. When, however, we come to consider lighter beers, such as ambrosia, 2 per cent. or even lower, the quantity required would be so great that it is doubtful, whether it would be possible to consume it, and when we pass below the proportion of one per cent. we certainly cannot consider the liquid intoxicating. Thus of a liquid containing one per cent. of alcohol one hundred ounces, over three quarts would be required, to reach even the lowest physiological limit. The low alcoholic strength and limitation of fermentation very much diminishes the craving for such liquors, and in almost all cases a sense of surfeit would be produced before an intoxicating amount would be

taken. It is the character of beverages of decided alcoholic percentage that they do not usually produce a sense of satiety and satisfaction of appetite which is noticed with true food and this I think is an important evidence that alcohol is not a true food, although it is a fact often overlooked. Deciding then the adjective "soft" in its popular sense is properly applied to these beverages, it remains to speak concerning their wholesomeness. I think we must decide this in the negative, although the degree of unwholesomeness is not very great. While we have no positive evidence that alcohol in this quantity is injurious to all persons, there can be but little doubt that it does no good when used in this form, and to many persons it is positively harmful. It is true that such drinks are not likely to be used in excessive quantities at any time, yet their flavors are somewhat seductive, and it is easy to establish a habit which may in many cases lead to digestive disturbances. They are necessarily crude and irregular in their preparation, possess no nutritive nor digestive functions, and contain, in those cases in which yeast is used freely in their preparation, a considerable amount of fermenting organisms in active condition. The aim in their preparation as mentioned in the beginning of the essay is to secure an effervescent beverage. The pleasant and perhaps beneficial effects of carbonic acid can be secured in a more satisfactory manner by the artificial effervescent drinks in which solutions of known character are employed. The cheapening and simplification of the aerating methods is a line of invention deserving of attention, and it is to be hoped that we may be able to secure some

system which will permit of the domestic manufacture of unfermented "soft" drinks.

HEALTHY HOUSE BUILDING.

BY C. FRANCIS OSBORNE,

Consulting Architect, Cornell University, Ithaca, N.Y.
[Concluded from page 264.]

In bringing to a close this series of papers it will be well first to review our position, so far as determined up to this point.

We have found the essentials of a healthy house to be

a. The location upon a site which shall be free from excess of moisture in the soil and from the accumulation and decay of organic matter, whether in the subsoil or on the surface.

b. The careful draining of the site by means of subsoil and surface drains so as to cause dryness in the foundations even during wet seasons or excessive rains.

c. An abundant supply to all parts of the house, both externally and internally, of pure air; heated in cold weather to the proper temperature and to be delivered to the various rooms in the building or to cause a constant circulation of the internal air, the removal of gaseous waste products, and freedom from draughts.

d. The arrangement and careful maintenance of such a system of plumbing and sewerage as will cause the delivery to all portions in the house at convenient places of an abundant supply of soft pure water, and the prompt and thorough removal of all solid and liquid wastes whatever from the house, with an efficient check to the admission of gases of decomposition from the sewer or other external receptacle.

e. The construction of the house throughout in such an efficient manner as to ensure thorough dryness in the walls at all seasons, together with the exclusion of the external air except through predetermined and pre-arranged channels.

f. The arrangement of the house, as to place, so as to ensure its convenient and wholesome use, and the promotion of the efficient working of the domestic machinery.

g. The disposition of the house, as to the points of the compass, so that the maximum amount of light and sunshine may be admitted to all parts, for the promotion of its cleanliness and wholesomeness.

It has already been pointed out how all of these things may be secured without going to greatly increased expense, and in some cases to none at all—depending as they do largely on the intelligent adjustment of such materials as usually enter into the composition of an ordinary dwelling house. It only remains now to consider a few points which have not been discussed.

One of the weak points in the arrangement of our house has been the discomfort of rooms in the attic, and so long has this state of affairs been in existence that it is usually accepted even in the best houses as one of the necessary limitations of the art of building. It may be affirmed, on the contrary, that it is entirely unnecessary, and that rooms under the roof, may be as comfortable as, or more so, than rooms on the first floor.

The attempts to remedy the extremes of temperature to which attic rooms are usually subjected are unsuccessful usually for the reason that they are based upon an erroneous idea that it is the mass of hot (or cold) air con-

fined under the roof which renders such rooms undesirable, and most efforts at amelioration have consisted in providing some method of ventilating the attic and especially any space which may exist between the attic ceiling and the roof proper. While this may in some slight degree render the rooms less uncomfortable, quite different means must be used as so to eradicate the evil.

It is the heating (or chilling) of the mass of the roof itself which is the cause of the evil, and we must turn our attention to so constructing it that it will change its temperature very slowly. This may be efficiently accomplished by adopting a modification of the principle of "slow-burning" construction already alluded to; and as it is a matter of common experience that the roof of one's house is usually the most inflammable part of it, the additional sense of security afforded by this method of construction, together with the increased comfort of living under it, will far more than compensate for the slightly increased cost.

The details of the construction are as follows:—Let the roof timbers be large, not less than 4 x 10 inches in depth and from 3 to 4 feet apart according to the size of the roof. Cover these with tongued and grooved plank not less than 2 inch thick. On this nail strips 1 inch thick by 2 inches wide properly spaced apart for nailing the slate or shingle to, fill in between these strips with cement mortar to the depth of one inch and cover all with slate or shingle in the usual manner. Such a roof will be simply impervious to heat or cold, and one may live under it in summer or winter without the least discomfort. It is understood of course that if plaster is used under-

neath on the ceiling it must be only *between* the rafters and not under them, as is more usual. Finally, let us consider the treatment of the interior of the rooms with reference to hygiene.

The detail of the interior design and finish of the public rooms of the house, such as the parlor, dining-room, reception-room, etc., may well be left to the guidance of individual taste. There is no necessity in such places for interference. But in all working or sleeping rooms,—especially in the latter—everything should be designed with reference to ease of cleansing and the least possible accumulation of dust and dirt. The moldings of the woodwork should be simple and of large section. The floors of hard wood brought to as smooth and permanent a surface as possible. Carpets made up in the form of rugs' stopping a foot or two short of the walls; or better still, unattached smaller rugs should be used as a floor covering. Elaborate hangings, especially window curtains and portières of rough shaggy material should be eschewed, and such drapery as is considered necessary should be readily detachable and frequently beaten and bleached in the open air. The surfaces of the walls should be hard, preferably of some of the indestructible patented plasters, and better painted than papered. Calcimining is a good substitute for paint if renewed, but is not so easily cleaned.

In sleeping rooms especially avoid the accumulation of borders and papers or other objects not easily cleaned and dusted, keeping in view always that what is to be accomplished is the securing of a room which shall always be sweet and clean, and especially easily renewed and disinfected in case of illness.

It would be better indeed if some large room in the attic or other isolated portion of the building, could be prepared and set apart for use as a hospital in case of severe illness, even when the nature of the latter is not contagious. By the use of cheerful tints in painting, and a few pictures, etc., such a room can be made anything but repellant.

The instructions given in the foregoing pages should suffice, to ensure in the hands of a skillful architect the erection and furnishing of a beautiful home, and one in which by the slightest attention to the ordinary laws of living the whole family should enjoy sound health; and if I have in any degree contributed to the securing of the attention of intending house-builders to this important subject, I shall feel that I have so far, contributed to the success of the mission of THE ANNALS OF HYGIENE.

FALSE TEETH AS A CAUSE AND CURE OF THROAT AFFECTIONS.

BY EPHRAIM CUTTER, M.D., LL.D.,
HON. F.S.S., LOND., NEW YORK.

In his late address before the Section of Laryngology of the American Medical Association at Newport, R. I., Dr. W. H. Daly of Pittsburgh spoke of the effect of vulcanized rubber plate false teeth in producing congestion, inflammation, ulceration and other affections of the throat thus calling public attention to an important cause of trouble which has not received the notice it deserves.

He favored gold plate.

For years the writer has been convinced that false teeth might cause

many of the disturbances named, although the dentists he consulted thought they were innocent. The substance of the hard rubber plate colored red with mercury must be in a state of peculiar physical tension as red oxide of mercury is not chemically united with the rubber. Hence, warmed by the mouth and acted on by the mouth juices and liquids taken there must be a galvanic action which results in making soluble the mercury and in some cases must irritate the throat. An examination of vulcanized plates new and in use for some time showed many and extensive erosions on the old ones, proving the correctness of the surmise, again in the common gold plate there are gold, silver or copper, zinc and platinum entering into their composition so that even gold plates are complex structures and hence also liable to galvanic action. This is shown by their becoming brittle and tarnished by being used. It is difficult perhaps to prove the connection of gold teeth with throat disease but not so difficult to do so in relation to the red rubber plate. However, I have seen a throat with enlarged, excavated, anfractuons, reddened, inflamed and troublesome, at once relieved and afterwards cured by the use of a silicon plate and disuse of the gold plate. The lesions from rubber plates are not confined to the throat but may extend to the eyes, ears and face besides. I once saw a young woman who wore a hard black rubber plate. She had obstinate sore throat, alveolar processes of the upper jaw spongy, swelled, boggy-eyes sore, ears deaf, face spotted with sores—to name no more. The substitution of a silicon plate was followed by a relief from all these lesions. My dentist, Dr. Dunn, 331 Lexington

Avenue, prepares dentures made wholly of silicon, teeth, plate and all, (forming one continuous body), which are free from the galvanic and metallic action named, (so great an objection to all other styles), agree perfectly with the oral tissues, are cleanly and comfortable, besides removing the reflex irritation, oral and otherwise.

Thinking they should be better known these words are penned on my own responsibility and voluntarily.

THE METAL-WORKER'S OCCUPATION AND HIS HEALTH.*

BY PEMBERTON DUDLEY, M.D.,
Philadelphia, Pa.

The influence of occupation upon health forms a theme of earnest study to the sanitarian and the political economist, and forces itself upon the attention of the physician at every turn. That certain vocations are in their nature or else through their surroundings inimical to the health of those engaged therein, has come to be universally admitted. That certain other vocations are as certainly conducive to robust and vigorous health is not less generally understood. And yet we have only partially learned the lessons recorded in the general mortality rate, the average longevity and the prevalent diseases of the people engaged in this or that particular line of business industry. Only in recent years are we noting particularly the essential and accessory conditions and circumstances under which we carry on our daily work, with a view to learn how best to mitigate those that are unfavorable, and to promote those that are benefi-

* Read before the State Sanitary Convention held at Pittsburgh.

cial. And let me say here, in passing, that so long as we are deprived of the facilities for accumulating and preserving statistics relating to these subjects, so long shall we make but indifferent progress in our investigations, and we shall go on in our present course, sacrificing the lives of our people, through an ignorance born of a false economy—an economy which “withholdeth more than is meet, and yet tendeth to poverty.”

And so, while there is no occupation about which we have acquired complete sanitary knowledge, there are at least a few about which we have certain demonstrated facts that ought to be forcibly impressed upon the minds of our people, and especially upon the attention of employers and of persons seeking an occupation or profession for their growing children. It is the aim of this paper to present a few of the more prominent facts relating to one comprehensive department of the industries of our great Commonwealth, so far as these facts are known to affect the health of our people. I allude to our vast and diversified industries in the extraction of metals and the processes of their manufacture.

From observation of the steps required in securing the metallic ore, and conducting it through all its changes to the finished condition ready for the market, it seems that there is not a single stage at which the health of the workman is not exposed to some peculiar perils. Some of these dangers are well-nigh unavoidable, others appear to have been diminished by careful attention to principles developed by advancing knowledge, and a few, at least in some branches of the metal industry seem to have been re-

duced to a minimum. That further knowledge will give us yet increased control of the conditions unfavorable to our workmen can scarcely be doubted.

Remembering the various modes in which health is affected by occupation, and applying our knowledge to the occupations under consideration, we find connected with these vocations, at least the following causes of impaired health: constrained attitudes, and long-continued postures; intense or continuous muscular effort; violent muscular contraction suspending respiration, or impeding the heart's action, or interfering with the digestive function; heart-strain, followed by dilatation, with or without subsequent hypertrophy and its chain of consequent dangers; too long hours of exhausting labor; irregular hours of sleep; exposure to intense heat, or to sudden or frequent changes of extreme temperature; exposure to frequent wettings; exposure to dangerous gases, or to dangerous artificial vapors; constrained or prolonged use of the eyes under insufficient light; prolonged exposure of the eyes to intense light or heat, or to the glitter of highly polished surfaces, inhalation of metallic and mineral dust, &c., &c. And as already said, some one or more of these perils confronts the workman at every step,—in mining, lifting, hauling, smelting, refining, moulding, forging, rolling, cutting, turning, grinding, polishing—each of them has its own conditions of labor, its own perils and its own list of victims.

In regard to a portion of the untoward influences above mentioned, the public are already suspicious. The dangers likely to follow exposure to wetting or to extreme cold or to fre-

quent changes of atmospheric temperature are understood sufficiently well to make thoughtful people cautious, and if our mining population should be disposed to make light of these dangers, their prevalent pneumonias, their asthmas and their rheumatisms serve as constant reminders of ever-present perils. So too the danger of respiring subterranean gases, or even the products of combustion and respiration are well understood, spite of our crude notions as to the means for avoiding them. Something is also understood of the dangers attending muscular strain, though its effect upon heart, lungs and stomach may be only partially suspected by our workmen and their employers.

There is one point, however, upon which it may be said, that the knowledge possessed by physicians and other sanitarians is not properly shared by the general public, and that is the hazard involved in the inhalation of dust, and especially of metallic and mineral dust. People have so industriously read and imbibed the advertisements of patent cough-mixtures, and have so universally associated the cough of a consumption with the cough of a laryngeal, tracheal or bronchial catarrh, as to have reached the conclusion that to avoid consumption, one need only avoid "taking cold." Our people need to be carefully instructed in two particulars: *first*, that a cough can be produced in numerous ways, other than by "taking cold, and *second*, that, in all probability, a majority of the cases of lung-consumption do not originate in a "cold" at all, but in quite a variety of other ways; the "cold," as it is called, having been but a secondary factor in developing and intensifying a process which had

its beginnings months or years previously. It will be somewhat difficult, however, to convince the masses of the truth and importance of these statements so long as they continue to obtain their medical lore from quack advertisements in the newspapers.

In the causation of pulmonary consumption, there are few things more definitely established than the baneful influence of mineral dust. In persons continuously exposed to an atmosphere more or less charged with the gritty particles of metallic or other mineral bodies, and who constantly take these particles into contact with the lining of the air-cells and tubes, the liability to, and probability of subsequent phthisis are increased to a surprising degree. Abundant evidence has been found to show that particles of silex, iron oxide and other substances penetrate the walls of the air-cells and minute bronchial tubes, developing irritation, inducing indurations, the formation of nodules and the deposit of tubercle, these masses finally exhibiting the degenerative changes common in phthisis arising by other modes.

The extent to which these degenerative changes in lung tissue exhibit themselves in metallic and mineral dust-workers, is well shown in certain statistics to be found in our medical and sanitary text-books. The tables prepared by Hirt show that of the patients treated in the hospitals of Breslau and Würzburg, those whose occupations involved practical freedom from dusty atmosphere, showed a proportion of phthisis cases amounting to about 8 to 18 per cent, while of those exposed to metallic and mineral dust the proportion was from 8 to 80 per cent. Among needle-polishers — I quote from Dr. Tracy—the proportion

of phthisis cases to the total number of the sick reaches the astonishing figure of 69.6 per cent, and among flint-workers the frightful ratio of 80 per cent. File-cutters, lithographers, grinders, and other metal-workers and mineral-workers, showed the effects of occupation in a scarcely less remarkable degree. Three reliable observers have agreed in statements indicating that the needle-polishers of Derbyshire, at least in former times, rarely reached the close of their thirty-fifth year. They died of phthisis.

Two important facts of a practical nature remain to be mentioned. One is, that the conditions under which our operatives labor are amenable to improvement under the influence of progressive science and invention. Thus it is said that of late years the trade of the needle-polisher, from being one of the most dangerous of vocations, has become one of the safest—a change due entirely to improved methods. Another is, that according to the views of our best medical authorities, the lung disease which springs from the inhalation of gritty dust and independently of predisposition, is not hereditary, and moreover may often be arrested, and health restored, by an abandonment of the dangerous occupation.

THE HYGIENE OF PUBLIC INSTITUTIONS.*

BY SELDEN H. TALCOTT.
MIDDLETOWN, NEW YORK.

The first essential to health in every public institution is a suitable location. This should be selected with a view of securing purity of surrounding atmosphere, abundant supply of water, a

thorough facility for drainage, and the disposal of sewage. Whenever practicable, the site selected should be a plateau of land so situated that there is an easy and natural slope in every direction. Such sites may easily be secured in almost any portion of the eastern, middle, and upper western states.

While it is sometimes desirable to locate a public institution near the sea shore, or along some river course, it is also wiser and safer to go beyond and above the valleys, and thus avoid, as far as possible, a foggy, or murky, or humid atmosphere.

A suitable site having been selected, the building should be constructed with a view of securing easy and abundant ventilation, and the rapid discharge of all waste material. Particular attention should be given to the foundation walls and the basement. These walls should not only be securely laid, but they should be thoroughly drained, both externally and internally. The floor of the basement should be absolutely solid and impervious to moisture. It should either be flagged and the joints carefully cemented, or a heavy coat of cement should be laid upon concrete. No pipes should be placed under the basement floor, except the necessary drainage pipes. All pipes for the conduction of water or steam, or sewage, should be hung up in plain sight, and where, in case of leak, they may be easily repaired.

The basement of every public building should be used for no other purposes than that of ventilation and heating. Basement windows should be large enough to admit and transmit constantly a large supply of fresh air.

*Read before The Sanitary Convention at Pittsburgh.

The cooking in a public institution should be done either in the attic of the main building, or in a separate and independent structure. All stores of whatever sort or variety should be kept in detached buildings, and no fruits, or vegetables, or meats, or other articles liable to decay should ever be permitted in the basement of a public institution. No one should be allowed to sleep in the basement, for, if this is allowed, the air in the rooms overhead is quite certain to become contaminated.

All public buildings for the accommodation of either the sane or the insane should be no more than two stories in height. It is better to extend the buildings over a large area than it is to pile one story over another in a public hospital. Where patients are kept in a two story building, it is easy, even for those who are weak, to readily go out upon the grounds; and, in case of fire, it is easier to save those who are upon the second floor than those who might chance to be upon the fourth or fifth floor.

So far as practicable, the baths, water closets, lavatories, and slop sinks should be located in separate towers, conveniently attached to each pavilion for the reception and treatment of the sick.

The plumbing should be absolutely perfect, as upon it depends, very largely, the healthfulness of the institution. All possibility of the escape of sewer gas into the wards and corridors should be scrupulously avoided.

After the sewage has been gathered into suitable pipes and removed from the building, then it should be carried as far as possible towards the south or the north, and not towards

the east or the west. Thus the winds will not bring back the offensive odors. The sewage should be conducted to large cesspools, and these cesspools should be emptied every twenty-four hours, by means of a siphon. The sewage, in order to be distributed without contaminating adjacent streams or without imposing upon those living in the vicinity of the hospital, should be distributed through an arterial network of drain pipes, located about one foot underneath the ground. This is the sub-irrigation plan of Mr. Waring. Before the sub-irrigation tiles are laid, the land itself should be thoroughly underdrained with large tile pipes, placed at least three and a half feet under the surface. Then the sewage distributing pipes should be so laid as to cross the regular drain pipes. In this way, the land may be thoroughly fertilized, while the unavoidable waste is filtered through two feet of soil, at least, and thus purified it passes into the drain pipes to be carried away to some neighboring stream.

The walls of a hospital should be of brick or stone; or a wooden frame may be put up, and in this may be placed layers of mineral wool, or some such material, so that in case of a fire, the walls may burn slowly.

All the main stairways should be of stone, set in brick walls, so as to be fire-proof.

The floors of all bath rooms and water closets should be tile, or slate, or cement. Wherever practicable, bathrooms and stairways and halls should be wainscotted with dry, hard wood, thoroughly seasoned, matched, and covered with a varnish or other preparation to prevent the ingress of moisture. All floors should be smooth, hard, and oiled, to prevent the ab-

sorption of foul matter. The side walls may be plastered, the last coat being a preparation of cement. The ceilings overhead should be covered with corrugated iron, instead of plaster; thus all danger from falling plaster is avoided.

Paint should be used freely in public buildings. Walls may be painted, while wainscoting may be oiled or varnished. Two or three coats of paint applied to an old wall seems to have a good effect in either fixing or destroying the germs of disease which may have lodged therein. Where the walls are suitably tinted and decorated with stencil tracings, they may be made very beautiful and attractive, and thus conduce to the comfort and happiness of the patients.

The floors of the main halls in every hospital should be free from carpeting, and should be kept clean and highly polished. The same may be said of wards where those suffering with contagious or infectious diseases are being treated. In parlors and bed rooms of asylums, carpeting may be used, both for the purpose of rendering them homelike and cheerful in appearance, and also to make them somewhat more comfortable in the winter season. If a room cannot be carpeted throughout, then a soft rug should be placed beside each bed.

The water supply in every hospital should be practically unlimited. Water is the great disinfectant, and should be used without stint or limit; but its application should be rapid and skillful. Every dusty floor should be mopped once or twice a day, but after the dust is removed with water, the water itself should be wiped up, and the floor left dry. All water closets should be drenched freely and fre-

quently with water, not only when the water closet is in use, but every morning and evening the water in every trap should be changed, even if that trap has not been in use. The fresh air supply in every hospital should be as constant and as free as the water supply. Air should not only be permitted to enter, but it should be forced to permeate every portion of every room and hall and corridor, at all times both night and day. The change of air should be slow, to avoid drafts, but it should be certain. Where the basement is absolutely clean, fresh air may enter it and pass by flues directly to every room. The foul air should be drawn out at the top of the building, from every room, by means of steam coils placed over the ventilators, thus creating and insuring a constant change of air. Air charged with carbonic acid gas should be forced out through openings near the floor.

Hygiene in public institutions includes not only proper construction, proper sewerage, and full supplies of fresh air and fresh water, but it should include also a consideration of food supplies. By making a wise selection of the varieties of foods which come within our reach, we may be able to relieve the unfortunate conditions and tendencies which exist always among the sick. Food should be furnished for the purpose of replenishing the wastes of disease, and also for the purpose of recuperating those who have suffered from long continued exhaustion through disease.

The best food having been selected, then special attention should be given to its palatable preparation for the use of the patients. Good cooking should be recognized not only as a fine-art, but as an imperative necessity in every

public institution. It is wise to remember just what are the effects of various foods upon the human system. Lean meat stimulates; fat meat relieves nervous erethism; vegetables sustain life in a moderate and healthful manner; fruit purifies and cools the blood, and aids in keeping pure the general system; grain foods and milk nourish, upbuild, and recuperate all the life forces.

When the food of an establishment has been carefully selected, and skillfully prepared for eating, and wisely administered, then the patients subjected to such nourishment are most surely put upon the direct line to recovery.

We offer these few hints upon hygiene in public institutions more for the purpose of stimulating further discussion upon the subject, than with the expectation of enlightening those who have taken the trouble to listen to these suggestions.

THE PROPER METHOD OF CONDUCTING AN ESTABLISHMENT FOR THE PROPAGATION OF VACCINE VIRUS.*

BY H. M. ALEXANDER, M. D.,
MARIETTA, PA.

In response to a kind invitation I appear before this convention, with a brief paper on the proper manner of conducting an establishment for the propagation of vaccine virus.

To even touch the annoyances, many physicians have experienced in the use of vaccine, the methods of sale, keeping, shipping, operation and application, would call for many times 15

minutes, and ere the whole story would be recited, you would be tired of the reader if not of the tale.

I shall confine myself exclusively to the buildings, their sanitary arrangements and methods of propagating.

He who intends to propagate vaccine virus, should select high ground in the open country, not in the built up portion of the city or town. Not only the advantages of pure air and clean surroundings are gained, but the stables can be made cool on hot summer nights, for the inoculated cattle, an all important consideration if you would avoid confluence or malignancy; of itself sufficient to exclude the crowded city stables now so frequently used, if all other considerations were laid aside.

The stables should be large with plenty of space for each heifer, unobstructed by the too common high boarded stalls; the aisles should be wide; drainage as nearly perfect as human skill can make it. The ordinary traps opening into the hay and feed apartments above, should be discarded, and ventilators reaching from the stables to a proper distance above the roofs should be used, as, not only being better to carry out the loaded gases, but to prevent their poisonous deposits being conveyed back on the provenders.

These stables should be heated, but not over 40 or 50 degrees Fahrenheit. Stoves or dry air is objectionable; being difficult to regulate so as to have an even temperature in all portions of so large a compartment. Steam is far superior.

The operating room should be fitted up with every convenience, that it may be quickly and thoroughly ventilated. The floors sloped and the drainage

Read before the Sanitary Convention at Pittsburgh.

such that open spiggots or a hose can carry off all droppings or impurities, with the greatest promptness. All receptacles for excrement, operating in stalls, or any portion of the stabling, which I am sorry to say is so frequently done to-day, is to be deprecated. The stock used consists mostly of heifers; varying in age, from four weeks to four years. Both sexes are used and there is very little if any difference either in the yield or the quality of the virus.

The calves or those under eight months, are frequently poor feeders. The action of the disease is very irregular, due to this and many other causes, while the virus they yield is uncertain.

Those over two years are entering the tuberculous period, and besides this danger the vaccinations made with virus has been found very often unnecessarily severe.

When possible the male animal should be excluded, as it is far more difficult to keep the parts operated upon clear of stable debris.

You will recognize then that I would suggest the selecting of healthy heifers, from eight months to two years of age. While it has been shown by careful experiment, that cattle under two years are exempt from tuberculosis, a disease very prevalent; yet it is all important that these heifers destined to furnish the virus, we are asked and often forced to introduce into our system, should be healthy, in good condition, and something be known of their history.

Many propagators buy their stock at the drover's markets, bruised by shipping, and frequently much reduced by the inhuman methods of crowding and handling cattle trains. Others purchase their cattle from the farmers in

the counties round about them; while others only rent the heifers, the surrounding farmers are rearing for their future milkers, returning them after 30 days.

This last is undoubtedly the best method; for the farmer has selected the choicest before you come, and killed or sold the rejected ones. But a still greater advantage lies in the fact that in a few years the propagator finds himself in possession of the pedigree of every heifer; having used their mothers, grand mothers, great grand-mothers, sisters and aunts. If there is a sick cow in the country the proprietor can look it up, and avoid the offspring, or aid in getting the undesirable cow out of the neighborhood.

I know a propagator, who, not a year since, learned of the presence of a sick cow, went to see her, found she was suffering from consumption, and failing to convince the owner, he called on the ladies of the household and so alarmed them, they refused to use any more of her milk. Instead of killing her as should have been done, she was given to a poor huckster, whose large family used all the milk she yielded.

The same methods were used with this family to rid the neighborhood of her presence; but failing, the propagator asked for a price to be put on her, and paid it on condition that she be killed at once. The huckster realizing the fact that cities seldom object to adulterated milk, drove her to a neighboring town and traded for a crippled mule.

I do not think I need to say any more to convince you of the great advantage of this latter mode of procuring stock. Thus obtained they should be carefully brought to the establishment, placed in the stables before de-

scribed, properly examined, treated to a bran mash and with continued careful feeding and good grooming, they will be ready for the operating table in a very few days.

Many plans have been devised for casting and holding cattle for this operation. Some have a series of uprights that are pressed against them, holding as in a vise, while on their feet, operating in this way. The objection is that it is difficult to work at the portions selected, and almost impossible to keep clean during the entire time of the operation. Others cast them on their side, which makes it nigh unto impossible to work with satisfaction on the inner side of the upper flank, and many cattle become much distended, commonly called bloated, and have to be removed before the operation is completed.

Still another method is to cast them into a cushioned V shaped apparatus; with the center grooved out, that they may not rest directly on the spinal column, but on the broad and strong portions of the back, contiguous thereto, with their feet fastened to uprights by cushioned straps. They will lie comfortably in this way for almost any length of time.

The parts generally selected are the inner sides of the thighs, just back of and above the udder. The hair is all shaven off as from the face by the tonsorial artist. Some prefer that portion of the abdomen, immediately in front of the udder; while many use both points.

The animal shaven ready for the scarifier, brings us to a much mooted question, regarding the number and size of the scarifications. Some propagators contend that the places selected should not be larger than the size of a

nickel; while others make them as large as silver dollars. It must be remembered that if the operation is a success, seven days later when the animal is ready for the removal of the virus, the spots or points of selection will be fully twice their original size.

Those who favor very small scarifications charge that the large ones yield a greater number of ivory points, but that it is not vaccine virus, only serum; and deny that any vesicle can be made to yield a pure article in any such quantities.

Those in favor of the large scarifications reply, that they only make 10 or 15 of them, against 80 or 90 small ones; and that the animal is only yielding the same amount of virus, with the exception that they can get it all, while from a large number of small scarifications this is impossible.

I think there are serious objections to both methods. The scarifications should not be originally larger than a silver quarter, and should not number over 12 to 20, according to size and age of animal. Too large a surface with its attending inflammation, produces when the vesicles are opened, a flow that must be largely diluted with serum, and certainly contains dangerous products of this great inflammatory action. On the other hand those who adopt small scarifications and make 80 to 100 of them, must and do use pressure to get any yield at all. Some have forceps made especially for this purpose with which they catch the tissues surrounding the vesicle, and apply great pressure. By this method they also start a flow of serum; get far more blood than they would otherwise, and on ivory points coated in this manner you invariably find small particles of destroyed tissue that has been

sloughing off, and has finally been separated by the pressure and adhered to the ivory point, together with the serum, blood and virus.

I cannot but believe there is a happy medium. An animal is only capable of yielding a certain amount of pure vaccine lymph. If so many small scarifications, pressure must be used, and it is objectionable. The extremely large ones cause too great inflammation, and the products of this inflammatory action, with an admixture of serum and virus is the result. A medium sized scarification and not too many of them, will yield all the virus the animal is capable of, and it can be gotten without pressure.

To return to the operation. The animal is vaccinated much the same as a child. Care being taken that the lymph which has been procured from a previous animal is well scratched into the scarified portions, to insure success. She is then returned to stall, kept on clean straw, well fed and cared for until the seventh or eighth day. No flies or avoidable dust should be permitted in the stables.

I would not cover the parts, for should you do so, the disease is almost certain to assume a confluent form due to the heat. The areola is not marked as on the human arm. About the beginning of the sixth day a large number of pocks occupy the edge of the scarifications. These to a very considerable extent rupture; and in this manner increase the size of the vesicle. A few of these appear over the shaven portion, and go on to complete development. Nor are the crusts depressed as on the human subject. Many of them are found convex in form, and are frequently lost.

The heifer seldom has great fever;

the temperature never rising more than one or two degrees; while only one in a great number will refuse to eat one meal, when the disease is at its highest point.

The time to remove the lymph can only be told by long experience, and I cannot now enter into the many details connected therewith. I want to draw your attention to the removal of the lymph, and the form in which it is stored.

Supposing the heifer to be ready, she is again cast on the table previously described, the crusts removed, and then sponged gently to pick up any small particles of objectionable matter, as well as to remove all pus and blood. If she has been properly vaccinated, in a few moments the lymph will stand out all over the surface of the vesicles, like drops of perspiration.

Nearly all the propagators coat ivory points and quills by rubbing or wiping the point or quill on the surface of the sore. I oppose this method, as I am certain this constant irritation kept up as it is for hours at a time, will render it impossible for any operator to say what he is getting or when he should cease.

The far better plan is to take a camel's hair brush, touch it to these drops, not brushing over surface, and then place it on the points or quills, previously fixed in little racks or holders. The vesicle is not irritated more than is caused by the removal of the crust. Besides you have avoided all particles of destroyed tissue, and other objectionable matter, impossible by the other methods. When the lymph is about spent, the surfaces glaze over, ceasing to exude and you know you have quit at the proper time.

The length of this article prevents me from saying much about the different forms in which we find vaccine sold. I shall content myself by simply naming a few of the most common forms, as the crusts, tablets, cones, quills, ivory points and lymph tubes. I should like to speak of the relative claims of these different forms, but this I cannot now do; so will ask your attention to this familiar ivory point of American origin and manufacture. Then to these, picked up by my friend Dr. M. B. Richard, while in Vienna.

They are certainly very expensively finished, and with all due respect for the European propagators, I must express the opinion that I believe they spent far more thought on the handles of these fancy vehicles of vaccine virus, than they did on the lymph itself.

In this statement I am borne out by the fact that they have to a great extent ceased to use Bovine Lymph, using humanized, gathered in small lymph tubes, like these samples I show you, from the arms of the children in large cities.

These gatherers called collectors, are paid by dealers so much per tube; and I am creditably informed that the slums of London, furnish the greater number.

In conclusion I cannot refrain from drawing your attention to the fact that while Europe can lay claim to the discovery of cow-pox, and to its general introduction in the medical practice in 1797, a century will not have gone by until she looks across the sea to America for her supply.

Animal vaccination was only introduced into this country in 1870, by the late Dr. Martin. The United States Government about the year 1880, re-

cognizing the necessity of animal vaccine, as usual forgot to encourage home enterprise, and catered to Europe by placing vaccine on the free list.

But America, thank God, is capable of greater things than her Congress; and I have lately had the pleasure of reading a letter containing a large order addressed to an American propagator, no by less a personage than W. Faulkner, M.R.C.S., of London, England, and deputy vaccinator to the Vaccinal Institution of London, in which he says: "Your vaccine is not only better than ours, but we can purchase it from you cheaper than we can propagate."

AN AGED PAIR OF TWINS.—David Chase, of North Haverhill, N. H., and Jonathan Chase, of Fall River, Wis., are twin brothers, and their age is ninety-four years. Both are in remarkably good health.—*Boston Traveler*.

SELLING CIGARETTES TO CHILDREN.—A conviction, under the new law in New York State prohibiting the selling of cigarettes to children under sixteen years of age, has been obtained. The offender was compelled to pay a fine of fifty dollars.—*Medical News*.

A HEALTHFUL COSTUME.—According to the *Business Woman's Journal*, the present style of the Directoire suit is probably the most hygienic dress that has ever been worn by woman. The absence of full drapery and the plain skirts prevent it from encumbering the limbs, and relieve it from the unnecessary weight which has been so serious an objection to the old styles.

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EDITORIAL.

GOVERNOR BEAVER AND THE STATE BOARD OF HEALTH.

We have just completed (in company with Dr. George G. Groff), a tour through the flooded portion of our State, and we return home, bewildered, as it were, and scarcely able to comprehend rightly the horrible magnitude of the disaster that was wrought in a few short hours on the fateful days of May 31st and June 1st. It would seem that wherever there was water (and indeed in some places where previously there was no water) death, destruction, devastation, misery, want and danger of sickness is now to be found.

While, of course, the most terrible loss of life occurred at Johnstown, and on this account, (because of the humanity that is so gloriously inherent in our people) the greatest thought and attention has been centred upon this mountain town at the foot of the Alleghenies, yet the direful effects of the late terrible flood were, by no means, confined to Johnstown; in-

deed, in some respects, the results are even worse in other portions of the State. Up along the West branch of the Susquehanna, for instance, we find that the various towns and cities there located had been filled, yes literally filled, with the foulest kind of mud imaginable. Some of the contents of the cess-pools of Jersey Shore were left on the streets of Williamsport, that from Lock Haven in Jersey Shore, that from Renovo in Lock Haven and so on to the end. This whole valley might have been likened to a raging torrent, extending from mountain on one side to mountain on the other side, rushing seaward at the rate of ten or fifteen miles an hour, consisting of a mixture of water, the contents of cess-pools; the refuse from stables, barns and pig-styes; dead dogs, cats, mice, rats, cows, chickens, horses, snakes, frogs, pigs and Providence only knows what else, and depositing on every street, in every cellar, over every garden and yard, in the crevices between foundation stones and brick walls, the foulest deposit that it is possible for the mind of man to conceive of.

This, from a Sanitary point of view, was the condition that presented itself in the valley of the Susquehanna, on the 2d day of June last. In Johnstown, on the same day was found a spectacle of death, desolation, dejection and despair that has never been equalled in the history of the civilized world. The dead were at rest, but the survivors were a homeless, reckless, hopeless, half-crazed mass of humanity, truly pitiable to look upon. Chaos reigned supreme.

The first thought that forced itself upon the outsiders, who were sympathetic spectators of this awful work of

water, was that terrible plagues were inevitable. It had been the rule in the past that such calamities were sure to be followed by the even greater calamity of plague and it was confidently expected that history would repeat itself in the present instance. But those who thus reasoned forgot or were, for the moment, unmindful that within the past twenty years a great, glorious and beneficent influence has been spreading itself throughout the length and breadth of the land; they forgot that, almost imperceptibly, the science of hygiene had been gradually growing into and becoming an integral part of the faith of our people. They forgot that Pennsylvania has a State Board of Health composed of earnest, zealous, willing and energetic workers, ever on the alert to sniff the first smell of warfare with disease producing agencies and confident of their ability to avert disease whenever and wherever they are upheld by the hearty co-operation of the people. At once, and with singular promptitude, while others stood aghast and semi-paralyzed at the magnitude of the disaster that had swept over our State, the State Board of Health, with unfaltering confidence in its ability to avert pestilence, threw itself boldly into the thickest of the fight and with that confident security, born of the knowledge that hygiene is a *science*, challenged the countless myriads of microbes to mortal combat.

Can we imagine a picture more sublime. Seven men engaged in deadly warfare with millions upon millions of unseen but terribly potent enemies; seven men sacrificing their private interests, leaving their homes and their families and working night and day, at that season of the year when their

fellow men are resting from the labors of the past year, and for what; solely that their fellow human beings may be saved from disease. These men work not for reward, for (save the Secretary), not a member of the State Board of Health receives a penny of remuneration; on the contrary, by the loss of time from their private interests they are actually losers pecuniarily; not for glory; because there is no one who receives less credit than he who *prevents*; he who *cures* is a hero; he who *prevents* is passed by unnoticed because it seems impossible for the mind of man to properly grasp the value of prevention; that which might occur, but has not, does not possess for him a reality and he is very apt to attribute its non-occurrence rather to any cause than to the well directed efforts of scientific men. No; these seven men have been and are laboring constantly solely through a sense of duty. They know that it is possible to prevent the occurrence of the disease that was almost sure to follow these floods and they knew that it was their duty, as it was also their pleasure, to do their part in this scheme of prevention. This they have been and are doing. To a remarkable extent the people have co-operated with their efforts and the result has been what every intelligent Sanitarian could have predicted. As we said in the beginning, we have just returned from a thorough inspection of all the flooded districts, and we are able to announce authoritatively that in no section is there prevalent any sickness that can be traced to the flood.

To go back, the State Board of Health was fully alive to and thoroughly realized the necessities of the occasion. The Board knew just

what should be done and just how to do it, but it also knew that such sanitary work would require the expenditure of large sums of money and this it did not have. What then was to be done? At this critical juncture Governor Beaver threw himself into the breach. You gentlemen do the work, he said, and I will supply the money to pay for it. Thus fortified, the State Board of Health has gone straightforward day after day and night after night in its mission of mercy and good-fellowship. So far it is the victor in this terrible fight with disease, and if the people everywhere will but continue to co-operate with the Board in the future as they have in the past, it will continue the victor to the end.

Let us, in conclusion, remind our readers throughout the flooded districts that while they owe a deep debt of gratitude to the people who have so liberally contributed to relieve their distress, they owe a yet deeper obligation to Governor Beaver and the State Board of Health; to Governor Beaver for supplying the means therefore and to the State Board of Health for starting and maintaining in motion the machinery that has and will save them from disease and death.

THE CHANGE IN OUR BOARD.

It is with mingled feelings of regret and satisfaction that we note the change in the personnel of our Board. We feel that it is, to all of us, a matter of regret that Dr. Engelman is no longer a member of the Board, his term having expired July 1st. For two years, Dr. Engelman has made a most satisfactory and conscientious Presiding Officer, and we are sure that we but voice the sentiments of each

individual member of the Board when we say that we heartily regret the severance of our official relations. But since this separation must take place, we have a sense of satisfaction that Dr. Engelman has such a worthy successor as Dr. S. T. Davis, of Lancaster. In the name of the Board we cordially welcome Dr. Davis to our fellowship, and can wish, both for himself and ourselves, no better wish than that our relations with him may be as thoroughly cordial and pleasant as they have been with Dr. Engelman.

KEEP ON CLEANING UP.

The battle is half won; that is to say, we are half way through the warm weather and no sickness from the flood. The scrubbing brush and the bar of soap, as symbolical of cleanliness, so far hold the day. But, how often has a half won battle been lost because he who could easily have carried his victory to completion has become careless and allowed his enemy to steal a march upon him.

Keep up your good work. Clean, clean, clean; scrub, scrub, scrub; whitewash to-day and next Monday, and the week after next, and keep on until it gets so cold that the whitewash freezes. Knock the life out of these little microbes or rather starve them out by leaving not a particle of filth on which they can thrive.

WELLS IN THE FLOODED DISTRICTS.

As the result of personal observation on our inspection trip through the flooded districts, we are strongly inclined to feel that the greatest danger confronting the people of these regions is that to be feared from the use of

well water, for *every well in the flooded region was, by the flood, converted into a cess-pool.* We would urge in the strongest possible manner that well water should be absolutely abandoned. Let the cities and boroughs take steps to supply good, pure water to the people. If this cannot be done do not use your well water until the well has been thoroughly cleaned and scrubbed. If you continue to use the well water as it now is, LOOK OUT FOR TYPHOID FEVER IN THE FALL.

DR. LEE'S REPORT ON JOHNSTOWN.

We had expected to publish a short report from our Secretary, Dr. Benjamin Lee, on the work that has been done by the Board at Johnstown.

Owing to Dr. Lee's continued absence from home, (on duty at Johnstown, where he is likely to be for some time yet to come) we must postpone this report until some future issue.

THE BEER CURSE.—In appearance the beer-drinker may be the picture of health; but in reality he is most incapable of resisting disease. A slight injury, a severe cold, or a shock to the body or mind, will commonly provoke acute disease, ending fatally. Compared with inebriates who use different kinds of alcohol, he is more incurable, and more generally diseased. It is our observation that beer-drinking, in this country produces the very lowest kind of inebriety, closely allied to criminal insanity. The most dangerous class of ruffians in our large cities are beer drinkers. Intellectually a stupor amounting almost to paralysis arrests the reason, changing all the higher faculties into a mere animalism, sen-

sual, selfish, sluggish, varied only with paroxysms of anger that are senseless and brutal.—*Scientific American.*

THE HOUSEHOLD REFUSE OF NEW YORK.—Under the new sanitary regulations for New York, all household refuse is to be collected and dumped into the sea. Heretofore only such garbage as could be sold for feed for cattle and hogs could be put into the receptacles, and only such was removed. Now, bottles, ashes, and every description of household rubbish can be so disposed of without further cost than in regular taxation. The Board of Health has also decided to establish its own drug department, and thus avoid paying prescription prices to local drug stores for all charity prescriptions.—*Eng. News.*

TREATMENT FOR CATARRHAL AFFECTION OF THE THROAT.—Dr. G. B. Hope, 33 West 51st Street, New York, Attending Surgeon Metropolitan Throat Hospital, and Professor Diseases of the Throat, University of Vermont, says: "For a long time I have been employing Horsford's Acid Phosphate as a constitutional treatment for catarrhal affections of the throat. I consider it to be among the very best tonic excitants of the vocal organs, and particularly applicable in relieving the fatigue and huskiness of voice incident to those who pursue a professional career of actor or vocalist, and far preferable to the various forms of wines now so generally recommended for this purpose.

I have seen no other allusion to its employment in this direction, which I believe you are perfectly safe in recommending both from a theoretical and practical point of view.

NOTES AND COMMENTS.

TO KEEP THE HEAD COOL on hot nights a folded newspaper, or a pamphlet, between the head and the pillow, is a good thing and handy.

DIPHTHERIA.—Dr. John Irving, in the *British Medical Journal*, supports the view that "huge collections of decaying vegetable matter," such as stable manure, may, by disturbance, generate the disease, and cites several cases to prove his assertion.

DETROIT BOARD OF HEALTH.—At the annual meeting of the Board of Health of the city of Detroit Dr. Wm. Brodie was elected President. The members of the Board are, Dr. Brodie, Dr. Chapaton, His Honor, the Mayor, the President of the Police Commission, the Comptroller and Dr. Klein.

MUMPS AND ERYSIPELAS ARE CONTAGIOUS.—Yes; cheerfully; we answer to a correspondent who asks us to warn our readers that mumps and erysipelas are diseases that should be ranked in the contagious class. We believe isolation to be as important in these affections as in scarlet fever or measles.

DANGERS OF FOREIGN TRAVEL.—We learn through the *British Medical Journal*, that Sir Edward Watkin is energetically calling attention to the lamentable sanitary defects in one of the great hotels at Cannes, to which he has attributed the recent illness of several members of his family. A thorough inspection of foreign hotels is advocated. It is a fact that on both Continents the same cause of complaint

exists at health resorts. The sanitary laws should be enforced, and if necessary, special legislation obtained to make the greed of hotel proprietors subservient to the public welfare.

THE PLUMBER'S SONG.

"Tell me not in scornful numbers,
Sanitation is a dream:
Woe be to the man who slumbers,
Thinking drains are what they seem.

"Drains are real, bad gas injurious;
If the grave is not our goal.
All past systems are but spurious:
Carefully redrain the whole.

"Ill-drained houses all remind us,
Sanitation is sublime:
Shunning the association,
Henceforth shall be held a crime."
Edinburgh Medical Journal.

PREVENTION DOES PREVENT.—Dr. Garrison, Health Officer of Wheeling, remarks: One thing that weakens the public estimation of the importance of sanitary safe-guards is that nobody can prove that a preventive prevents. So long as the stable is locked, it is impossible to say that it has prevented the horse being stolen. Unlike most things, the usefulness of a preventive is proved only by *not* using it. The moment it is put in use, the demonstration of its necessity ceases.

ANTISEPTIC CARPENTRY. — There appears to be such a thing as a diagnosis of disease in wood and the botanical physicians profess to know that it may be contagious or sporadic. Dry rot is called contagious, and it is said that the germ of that disease may be communicated to sound wood by tools which have been at work in diseased. It is thought possible that the theory accounts for many incomprehensible breakages of timber. The suggestion

is made that sound lumber should not be cut with the same saw that has passed through stuff affected by dry rot without cleaning.—*Amer. Druggist.*

TO EXPEL MOSQUITOES.—Those living in a locality in which the mosquitoes are troublesome may make a trial of the following recipe for expelling these pests from the house: Take a piece of gum camphor, in size about the third of a hen's egg, and slowly evaporate it by holding it in a shovel or tin vessel over a lamp, taking care that it does not ignite. The smoke will soon fill the room and expel the mosquitoes, and it is said they will not return, even though the windows should be left open all night.

MEDICAL SCEPTICISM.—At the time when Russian society was at the height of scepticism, the eminent Professor N. G. Pirogoff, said, in one of his celebrated public speeches, that the life of every physician may be divided into three periods. The first, when he religiously believes in what he has been taught at the university; the second, when he only believes in what his own experience taught him; and the third, when he believes neither in one nor in the other.

PHYSICIANS WHO USE BICYCLES.—It is reported (says *The Sanitary Volunteer*) that several Milwaukee physicians have formed a league which will use the bicycle in making visits, especially in the night. This is a good move. There is no reason why the bicycle should not be used by professional and business men. The present "safeties" are elegant machines, easy to mount, and without danger from "headers." In fact, they are to be

commended, not only for usefulness, but as an unexcelled means of healthful and exhilarating exercise.

NASAL TROUBLES AND INTELLECTUAL POWER.—The medical journals are calling attention to the fact that nasal catarrh may in some cases profoundly affect the whole being, mental as well as physical. In a communication made to the Prussian Minister of Public Instruction a year and a half ago, Dr. M. Bresgen of Frankfort made the following statement: "Many a child, which, on account of inattention and inability to learn, remains behind his class, develops very quickly an increased power of mastering his studies, as soon as he is freed from an existing nasal trouble."—*Sanitary Inspector.*

COUNCILMAN SMITH ON HYGIENE. The Hon. Wm. M. Smith, our esteemed president of Common Councils, delivered an address to a class of young graduates recently, in which he judiciously advised them to recognize the laws of hygiene, and their relationship to long life, happiness, and to the attainment of earth's crowning glory—fame. This certainly is gratifying, and we hope that Mr. Smith will continue to embellish his speeches in the future with some remarks on this subject, and that his councilmanic influence may be used in every effort set forth by the Board of Health for the advancement of the conditions of the people of this city.

TYPHOID FEVER.—A man reading a newspaper in a car on the elevated road was observed to chuckle vociferously. Another man sitting alongside of him remarked: "You seem to be very

much amused!" "You bet I am amused; I expect to rake in several thousand dollars." "Rich relative dead and left you money?" "Better than that. I have just read that the board of health is going to tear up the streets in my ward and lay new sewer pipes. That means typhoid fever, and I am an undertaker. I tell you, my dear sir, I don't know what we poor undertakers would do for a living if it wasn't for the board of health."—*Drug Circular.*

DISINTERMENT OF BODIES DEAD OF CONTAGIOUS DISEASES.—"*I have carried my point; thanks for your assistance*" was the essence of a postal card received from Mr. L. T. Christian, a funeral director of Richmond, Va. Mr. Christian, who is chairman of the Committee on Health of the City Councils, had written for our views on the proposed disinterment and removal of a number of bodies dead of small-pox, to which project he was, very wisely, opposed. We wrote to him, what we here say publicly, that any community that would tolerate such a proceeding would be thoroughly deserving of a full-fledged pestilence and would not be justly entitled to one spark of sympathy.

ELECTRICAL QUACKERY.—The *Electrical Review* in speaking of those belts and pads which are peddled by charlatans says: To any person who has even the most elementary knowledge of the construction of a voltaic battery, the description here given of the constituent parts of one of these belts will serve to show that its capability as a generator and distributor of electricity is altogether inconsiderable. Neither better or worse than the amulet

to which the "untutored Savage" pins his faith, this costly trash is palmed off upon a public which, for unsuspecting simplicity, is worthy to compare with the Mashunas whom Mr. Selous found so hospitable in his travels in Equatorial Africa.

KEROSENE OIL AS A BREEDER OF DISEASE.—"Dr. N. A. Penoyer, some time ago, promulgated the theory that the smoke of burning kerosene oil had much to do with the causation of disease and its malignancy. Investigation on the subject invariably led to the reply that wherever a case of diphtheria was found, without exception, oil was used, either in the parlor lamp or kitchen light. Cases did not occur where gas alone was used. Several of the Health Boards in the East have lately expressed their opinion that the terrible epidemics lately experienced were due mainly to the increased use of this oil. Putrid sore throat, diphtheria, had always been more fatal in the Pennsylvania oil region, than in any other portion of the country."

So says one of our exchanges. We would be glad to hear from our readers in the "oil regions" on this subject.

PROFITS OF SANITARY INVESTMENT.—The city of Chattanooga has afforded a good example to other southern cities by voting in favor of an issue of \$700,000 of bonds for the construction of new and perfect sewerage. There has probably been a certain fear of yellow fever and other epidemic diseases which has kept northern visitors this year from customary visits to the "sunny South." There can be little doubt that the adoption of the improved system of sewerage at Atlantic City, N. J., has been the chief cause of its rise as a popular winter resort. Money spent in this manner is sure to prove a good investment by

the city which appreciates that everything is purchasable except health.—*Building.*

SYMPTOMS CAUSED BY EARTHQUAKES.—According to Dr. Legaré, of Charleston, S. C., there were some peculiar features produced by the earthquake in that city, from a medical point of view. One of the most common conditions was an obstinate nausea, and in treating these cases he found the only remedy that would give any satisfaction was muriate of cocaine. Another condition found was falling off of the hair in patches, especially among the ladies. He had three cases in which the hair gradually fell out in patches, which he attributed to nervous shock. Fortunately the hair was generally saved. These were the most prominent symptoms produced by the earthquake.

A USEFUL CEMENT.—The following mixture has been used with the greatest possible success for the cementing of iron railing tops, iron gratings to stone, etc. ; in fact, with such effect as to resist the blows of a sledge-hammer. This mixture is composed of equal parts of sulphur and white lead, with about one-sixth proportion of borax, the three being thoroughly incorporated together, so as to form one homogeneous mass. When the application of this composition is to be made, it is wet with strong sulphuric acid, and a thin layer of it is placed between the two pieces of iron, these being at once pressed together. In five days it will be perfectly dry, all traces of the cement having vanished, and the work having every appearance of welding.—*Popular Science News.*

ARSENICAL WALL PAPER.—"Mr. Matthieu Williams has suggested that the arsenical wall-papers, which are generally regarded as detrimental to health in ordinary localities, may be useful as a protection against the dangers of regions subject to malaria. In a recent number of the *Gentleman's Magazine*, he says: I maintain that the hotels in the vicinity of the Campagna, the Pontine marshes, the Maremma and other malarious regions of Italy, should be papered throughout with brilliant green arsenical papers, and painted with Scheele's green or other arsenical pigment. The same should be done in New Orleans and all other such places, for the special benefit of non-acclimatized visitors."

We give this for what it is worth, but we much question its wisdom.

TEA DRUNKARDS.—In closing what is to be said about tea, one word seems necessary in regard to tea-drunkards. Their number is legion ; they are of both sexes, but more of women than men. Instead of using tea in moderation, or as an occasional beverage, they swill it down three or more times a day, in quantities that are incompatible with health. They are as much slaves to the teapot as the drunkard is to his bottle. They are tea-drunkards. Tea, in anything but great moderation, is a poison capable of ruining the stomach, enfeebling and disordering the heart's action, shattering the nerves, and ruining the health and happiness of the victim. A tea-drunkard may be defined as one who drinks strong tea several times a day, who depends on it instead of food and rest for strength, and who cannot go without it without bringing on distressing symptoms.—*Eating for Strength.*

DR. MATTHEWS AT JOHNSTOWN.—

“One of the bright spots in the Johnstown disaster is furnished by a member of our profession. Among the mass of shattered humanity was Dr. Matthews. He had himself sustained the fracture of several ribs; but with the loyal instinct of the right-hearted physician he devoted himself to those about him who, with broken limbs and otherwise gravely hurt, were in need of some surgical help, besides cheering them with encouraging words. In the scattered and disjointed reports we have had but a glimpse of this scene, but when the history of the great event is connectedly written, it is to be hoped that this episode will be found true and due honor given to the hero of it.”

We reproduce the above from the *Albany Medical Annals* with the greatest pleasure because we know it to be true. Dr. Matthews has been, from the start, and still is, working for the State Board of Health, and his services have been inestimably valuable.

A PHILANTHROPIC PRINCE.—The Duke Charles Theodore of the house of Bavaria is well-nigh worshiped by the poor peasants about Meran, in the Austrian Tyrol, for his goodness of heart and his actual services in their behalf. They call him “the good Duke-Doctor.” He annually offers his gratuitous help to the poor who have need of eye treatment. It is stated that this spring he, with an assistant surgeon, saw 1,091 cases, many of them surgical. Cataract operations to the number of sixty-eight were done, all of them primarily successful.

This is, indeed, princely conduct, and a remarkable improvement upon the kind of surgery done by many of his illustrious ancestors, whose work with cutting implements was chiefly limited to the field of battle; they were

destructive in their intents and tendencies, he is reconstructive. And so he may be considered to mark a new era among the hereditary rulers of Europe.

EXERCISE AND MEDICINE.—Boerhaave, the famous physician, declared that a man was more likely to get well by climbing a tree than by drinking a decoction made of its leaves! that is, he thought exercise better than medicine. It is on this principle that the Queen of Sweden, whose nervous condition has given rise to much anxiety, is being treated. She is ordered to make her bed and sweep her room, besides taking a large amount of walking exercise. This method—the “house-maid treatment,” as she calls it—has inspired a cynical journalist with some suggestions which are, perhaps, wiser than he knows. He advises the “office-boy treatment,” for the dyspeptic millionaire, the “groom treatment” for the Cræsus whose liver is too much with him, the “country postman treatment” for the obese financier; the “nurse-maid treatment” for the hysterical woman who cannot stand a child’s cry, and the “old-clothes woman treatment” for the fine lady who faints at the sight of powder. Probably the “treatments” would be efficacious—if the patient would submit.—*London Hospital*.

TAKE TIME TO EAT.—The opinion that hurry in eating is a prolific cause of dyspepsia is founded on common observation. The ill results of “bolting” the food have been attributed to the lack of thorough mastication, and to the incomplete action of the saliva upon the food. Two-thirds of the food which we eat is starch, and starch

cannot be utilized in the system as food until it has been converted into sugar, and this change is principally effected by the saliva. But there is a third reason why rapidity of eating interferes with digestion. The presence of the salivary secretion in the stomach acts as a stimulus to the secretion of the gastric juice. Irrespective of the mechanical function of the teeth, food which goes into the stomach incompletely mingled with saliva, passes slowly and imperfectly through the process of stomach digestion. Therefore, as a sanitary maxim of no mean value, teach the children to eat slowly—and in giving this instruction by example, the teacher, as well as his pupils, may receive a benefit.—*Sanitary Inspector*.

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HYGIENIC ECONOMY.—Before the late meeting of the American Medical Association, Col. George E. Waring, Jr., estimated that the institution of proper sanitary methods throughout the country would result in the saving of over three hundred and fifty thousand lives every year, taking no account whatever of the amount of misery and loss of productive labor, from preventable sickness, that would be done away with. A proper application of the arts of the sanitary engineer would suffice, therefore, to save to the country one thousand of its citizens every day, an estimate based upon no untried conditions, but resting upon the results already attained. He then referred to the relations of the biologist and sanitary engineer. Formerly the engineer's work was largely empirical, but now the biologist, in his researches into the cause of disease, has discovered the reason of the engineer's success. The two professions should work in

harmony, and the labors of both were needed to effect the necessary reforms and to bring about the prevention of preventable diseases.

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THE RENOVATION OF NAPLES.—At last wise counsels have gained the ear and confidence of the Italian Government. The phrase "See Naples and die," had come to have a fearful and literal significance (says the *Jour. Am. Med. Ass.*) and the Neapolitan fever was the dread of all foreign travelers. But the day of its renovation has come to the beautiful city of Naples.

What Italy does, it does thoroughly, and this is no ordinary movement which the Government is making. It means the demolition of seventeen thousand houses and of sixty-two churches in the very heart of the city. It means the expenditure of over forty millions of dollars in one stupendous sanitary work, the cost to be borne mainly by the Italian Government. It will take ten years to complete the work. But let the health and prosperity of Naples be once more assured and the returns, even for this large expenditure, will be tenfold. The impetus thus given to the subject of sanitary science is to be world-wide in its results. Other cities have like needs. Other governments should follow this example.

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PATENT MEDICINES.—Prof. A. T. Cook (according to *The Sanitary Volunteer*) says that akin to the lightning-rod delusion is the common one that medicine (usually patent medicine) is necessary every time that we have an ache or pain. Unfortunately, this error in the public mind is not being corrected as is the other. Myriad ad-

vertisements, even in our best periodicals, prove this to be true. Dr. O.W. Holmes never uttered a truer witticism than when he said "It would be an immense blessing to mankind were all the medicine of the world cast into the sea, but it would be awful on the fish."

Why will people burden an already worn and tired body by dosing with medicine? In nine cases out of ten, care and rest would set all right; in nine cases out of ten, medicine makes it harder for nature to bind up the wounds. What is more irrational than dosing with patent medicine? We do not know what is wrong with our bodies, and we know even less of the medicine we take. Yet we close our eyes and gulp it down. The Lord preserve us: we need His help.

THE EATERS EATEN.—Food lodged and left in the crevices of the teeth, with constant moisture and warmth, constitutes an ideal culture bed for microbes that eat up the teeth—in common language, cause them to decay. The cavity almost invariably starts in a crevice between two teeth, or under the margin of the gums, or in one of the hollows in the crown of a molar, where an habitual deposit of fermenting matter is maintained and supports a microscopic colony of industrious and powerful bone-borers. Exact understanding of the nature of an evil is often a great help to impulse, if not to intelligence, in combatting it. People who know that in neglecting their teeth they are breeding malignant living enemies to devour them, will take up arms (tooth brushes) against such enemies more pugnaciously than against mere crumbs of bread and meat. We look also to see professional attention soon turned to antiseptic washes and

tooth powders, and to dental syringes for injecting the former where the brush cannot penetrate. Corrugated brushes, also, well adapted for entering the hollows, ought to be more common.—*Sanitary Era*.

A PESTILENCE FROM DISEASED VEAL.—At Kloten, near Zurich, in 1878, a festival was held, and of the 690 persons who partook of the meat served at the banquet 290 were taken sick with typhoid fever. Three hundred and seventy-eight people who did not attend the feast, but who ate the meat elsewhere were also affected. Besides these, 49 persons who had not eaten the meat were taken ill subsequently, and their illness could be accounted for by infection from the first cases; in other words, they were secondary cases. The place was free from typhoid, and it was clearly shown that the water did not cause the disease. All persons who ate no meat escaped, as did those who drank sufficient wine to cause them to vomit. It was found that forty-two pounds of veal was furnished by a butcher who had taken it from a calf that was moribund from disease at the time of killing. All the meat of this animal was sent to the festival at Kloten, but the liver was sold to a man at the town of Seaboch, and the brain was sent to the family of a clergyman in the same town. The former got typhoid fever, and the entire family of the latter were attacked by the disease.

THE PRIVY A PLAGUE FOR POSTERITY.—The *Sanitary Era* tells us that Dr. S. G. Franklin, in the Bulletin of the North Carolina State Board of Health, uses this language: "I venture to say there is not a physician

in North Carolina who is not chargeable with gross negligence in permitting this state of things to exist on his own premises, and with ignoring a great public duty when he does not call the attention of neighbors and patrons to the great danger liable to be thus incurred, even by the present generation, but more especially by our posterity. But the time will surely come, if present methods continue, when our sanitary sins will find us out, when typhoid fever and dysentery and diphtheria will become more and more common and more deadly." He urges the medical fraternity to advocate compulsory provision for soil removal. The *N. Y. Medical Journal* adds: "There are communities not very far from New York where no restrictions exist in regard to these structures, on the sites of which it will not be long before dwellings will be put up. Any of our older communities in which a "boom" in real estate and in building takes place will bear close watching in regard to the filth-pollution of the house-plot."

MISSOURI PHYSICIANS AND THE STATE BOARD OF HEALTH.—The Missouri State Board of Health (says the *Med. Record*,) has been obliged to adjourn *sine die*, because the Legislature refused to appropriate any money for its expenses.

This action of the Legislature is not so much a reproach to the lawmakers as it is to the physicians of the State of Missouri. They must be cast in a poor mould, indeed, if they have not sufficient character and influence to impress upon the public the importance of State medicine and sanitary work. We read in the *Kansas City Medical Record* that the Missouri State

Medical Association met at Springfield on May 22d, and that the subject of the State Board of Health was presented to the Society, but too late for action. It appears, also, from the comments of our contemporary, that Missouri physicians have been too anxious to get a State Board whose chief purpose should be to drive out quacks. Naturally, to the average legislator the medical support of this particular branch of sanitary science is not entirely disinterested. In the organization of a Health Board it can be but one factor, and apparently in Missouri it must be a minor one.

DEADLY SEWER GAS.—Because people live exposed to sewer-gas day by day and see no immediate ill effects they are loathe to believe that such results as sanitarians attribute to it often occur—that the danger therefrom is at most not very great. Daily observation teaches us that often immediate death follows the inhalation of sewer gas in a concentrated form. A case to the point was reported a few days ago as having occurred in Kansas City. Some workmen were opening a sewer pipe and accidentally broke the pipe thereby permitting the free escape of sewer gas. One was immediately overcome, and killed by the gas, and two others running to his assistance were also smitten down. Both of these were reported in a critical condition though it was believed that one could be saved.

Such a gas, so poisonous in a concentrated form, cannot be otherwise than poisonous in the most dilute form, though the certainty and promptness of death might not be marked, and the form of death different.—*Iowa State Board of Health*.

ICE-WATER.—There is a great deal of sentiment and many opinions (says *The Sanitary Volunteer*,) regarding the use of ice-water that vanish when the light of reason and experience is turned upon them. The fact is, that ice-water, drank slowly and in moderate quantities, constitutes a healthful and invigorating drink. There is no doubt that ice is a great sanitary agent, and every family ought to be provided with it during the warmer months of the year. It is true that the inordinate use of ice-water, or its use under some special conditions and circumstances, is attended with great danger; so is the improper use of any other drink or food. The assumption that iced water is dangerous, and that iced tea, or iced coffee, or iced lemonade is a harmless substitute, is simply a delusion. As the source of danger feared by some is the degree of cold, we fail to see clearly how flavor modifies the effect of temperature. There are some individuals, undoubtedly, who cannot drink ice-water without injury, and who ought never to use it, but to a great majority of persons it is refreshing and healthful. Its use, temperate and discreet, is in no way to be condemned, which cannot be said of some of its substitutes.

DUTY TO ONE'S NEIGHBOR.—The case of *Horne versus Jessop*, recently tried before Mr. Justice Denman, in England, is interesting from a medico-legal point of view. Mrs. Horne, a laundress at Huddersfield, sent her little boy to collect an account from her customer, Mr. Jessop, having no reason to know that Mr. Jessop's daughter, then in the house, had been stricken down with scarlet fever.

That was on June 8th. and on the 11th little Horne was found to be sickening. On the 11th his little sister was, under like circumstances, sent to Mr. Jessop's abode to fetch a bundle of linen for the wash, and two days after this child showed the initial symptoms of the same disease. Altogether four children were affected. The medical evidence went to show that from the fourth to the seventh day is the common period of infection, though it was admitted that it could take place within two days, and it was urged by the defence that scarlet fever was in the neighborhood, and that infection may have arisen from other sources. Further, it was contended that the linen carried by the children had not been exposed to the infection of the disease. The suit ended in a verdict, by consent, for the defendant, who was understood to have made a satisfactory arrangement with the Horne family. As Mr. Justice Denman hinted, there was much doubt and uncertainty in the case, but the lesson to be learnt is plain enough, viz., that when infectious disease occurs soiled linen must be washed at home.—*Montreal Med. Journal*.

PREVENTING CONSUMPTION.—The New York City Board of Health has issued the following rules to be observed for the prevention of the spread of consumption: 1. Do not permit persons suspected to have consumption to spit on the floor or on cloths unless the latter be immediately burned. The spittle of persons suspected to have consumption should be caught in earthen or glass dishes containing the following solution: Corrosive sublimate, 1 part; water, 1,000 parts. 2. Do not sleep in a room oc-

cupied by a person suspected of having consumption. The living-rooms of a consumptive patient should have as little furniture as practicable. Hangings should be especially avoided. The use of carpets, rugs, etc., ought always to be avoided. 3. Do not fail to wash thoroughly the eating utensils of a person suspected of having consumption as soon after eating as possible, using boiling water for the purpose. 4. Do not mingle the unwashed clothing of consumptive patients with similar clothing of other persons. 5. Do not fail to catch the bowel-discharges of consumptive patients, with diarrhœa, in a vessel containing corrosive sublimate, 1 part; water, 1,000 parts. 6. Do not fail to consult the family physician regarding the social relations of persons suffering from suspected consumption. 7. Do not permit mothers suspected of having consumption to nurse their offspring. 8. Household pets (animals or birds) are quite susceptible to tuberculosis; therefore, do not expose them to persons afflicted with consumption; also do not keep, but destroy at once, all household pets suspected of having consumption, otherwise they may give it to human beings. 9. Do not fail to thoroughly cleanse the floors, walls, and ceilings of the living and sleeping-rooms of persons suffering from consumption at least once in two weeks.

SUMMER OUTING.—Dr. C. A. Linsley, the Secretary of the Connecticut State Board of Health, who *always says something*, whenever he opens his mouth, gives the following grand advice which we should all carefully read and heed; “The season has arrived when it is the practice with many per-

sons to leave their homes and seek recreation and renewed vigor of health in some rural location.

“The much vaunted salubrity of the country farm house, which was so far beyond criticism a few years ago, has now under the illuminating exposure of modern sanitary science lost much of the charming halo of the goddess Hygeia which formerly surrounded it.

“The frequent proximity of hen-roosts, cow yards, ill kept stables and worse pig-styes, the cesspools and privy vaults, with the probable consequent contamination of the well, renders many of them places to be specially avoided. Consider the probable effect upon the health of a community if the average country farm houses, as they are commonly found, with the above mentioned appurtenances were placed in juxtaposition in streets, as in villages and towns. Their aggregation in close proximity would soon breed a pestilence.

There are also places not farm houses, no less objectionable, which have gained popularity as summer resorts, and which by reason of overcrowding and negligence of sanitary laws are dangerous to all who frequent them. The prevalence of Typhoid Fever in the autumn is partly due to the exposure which summer tourists have incurred by a careless indifference to the sanitary condition of the places in which they have sojourned.

“Before locating your family for their summer outing, make sure that you have chosen for them a healthy and well kept house, with good drainage, an unpolluted water supply, and where an intelligent respect is paid to the laws of Hygiene.”

INSOMNIA.—Are you afflicted with insomnia? Perhaps you have too much time for sleep. Perhaps you depend too much on sleep for rest and recuperation. For sleep is not the sole rest of used-up nerves. Sociability, congeniality and the enjoyment of good company rest the body quite as much as sleep. The dreary monotony of life in many a household, involving this tumbling into bed with the mechanical regularity of a machine at nine or ten o'clock in the evening, does not always rest weary bodies. "Early to bed and early to rise" does not always make a man healthy, wealthy or wise. Numbers of organizations are only capable of five or six hours sleep at a time, and their early lying down to rest is often succeeded by an early waking up and a consequent restless tossing for hours preceeding daybreak. The practicers of punctuality are often surprised after breaking their own cast-iron rules, and passing two or three later hours of mirth and jollity past their usual bed time, to find themselves even more refreshed in the morning than usual. The relaxation or sociability has rested them more than would sleep or an attempt to sleep. But these are conditions not so easily reached in the average family. In fashionable life we have a formal, exhausting and mechanical evening of more or less dissipation. On the other hand the evenings of great numbers of families are monotonous humdrum. They involve the assemblage of the same people, the same surroundings, the same paterfamilias yawning over his paper, and the same querulous mama overlaid with family cares. Fresh people with fresh thought, fresh atmosphere, anything to stir up and agitate the pool of

domestic stagnation, are sadly needed and sadly scarce. There needs to be also a constant succession of such fresh people to bring about these results. The world is full of men and women, and in a better regulated life it would be the business after the day's work was done to entertain each other, and give each other fresh life. As it is now, hundreds if not thousands of our households are little better than cells for the incarceration of each family. Thousands are thus worn out prematurely from utter lack of domestic recreation. There might be written over the graves of hundreds of thousands, "Bored to death by the stagnation of domestic life."—*The Christian at Work*.

STIMULANTS AND THE VOICE.—On this subject, Sir Morell Mackenzie, the great authority, thus writes in the *Contemporary Review*, "Tobacco, alcohol and fiery condiments of all kinds are best avoided by those who have to speak much, or at least they should be used in strict moderation. I feel bound to warn speakers addicted to the "herb nicotian" against cigarettes. Like tipping, the effect of cigarette smoking is cumulative, and the slight but constant absorption of tobacco juice and smoke makes the practice far more noxious in the long run than any other form of smoking. Our forefathers, who used regularly to end their evenings under the table, seem to have suffered little of the well-known effects of alcohol on the nerves, while the modern tippler, who is never intoxicated, is a being whose system may be said to be in a state of chronic inflammation. In like manner cigarette smokers (those at least who inhale the smoke, and do not merely

puff it "from the lips outward," as Carlyle would say) are often in a state of chronic narcotic poisoning.

The old jest about the slowness of the poison may seem applicable here, but though the process may be slow, there can be but little doubt that it is sure. Even if it does not kill the body, it too often kills or greatly impairs the victim's working efficiency and usefulness in life. The local effects of cigarettes in the mouth must also be taken into account by those whose work lies in the direction of public speech. The white spots on the tongue and inside of the cheeks, known as "smoker's patches," are believed by some doctors with special experience to be more a poison in devotees of the cigarette than in other smokers; this unhealthy condition of the mouth may not only make speaking troublesome, or even painful, but it is now proved to be a predisposing cause of cancer. All fiery or pungent foods, condiments or drinks tend to cause congestion of the throat, and if this condition becomes chronic it may lead to impairment, if not complete loss of voice. The supposed miraculous virtues of the mysterious possets and draughts on which some orators pin their faith exists mainly in the imagination of those who use them; at best they do nothing more than lubricate the joints of the vocal machine so as to make it work more smoothly.

HAPPY OLD AGE.—Perhaps the ambition of every young man and woman—and the earnest wish of all parents for their children is that they may live to a happy old age. And yet how few comparatively realize that wish! The great majority, perhaps four-fifths of the human family, never

reach three score years and ten. Of this small number to how few these advanced years bring aught but "labor and sorrow."

And yet we believe that a very much larger number should live to a good old age, that far too many die under seventy and far too few who reach seventy and beyond, are as cheerful and sunshiny as they should be. One of the saddest sights perhaps to be seen is an old man or woman in whom the milk of human kindness has turned to bitter milk—has soured.

There are many, many causes that lead to early deaths. The sins of parents through laws of heredity; the perils of childhood; such as infectious diseases, improper food, insufficient clothing, want of healthy and nutritious food, unhealthy surroundings, and the dangers of illy ventilated houses and school-rooms.

Then in maturer years the many reckless risks taken, the sowing of "Wild Oats," dissipation, fast living, dangerous occupations, the greed for gain, all contribute largely to the premature loss of life. When life is prolonged in adverse circumstances it is too often with an heritage of aches and pains, poor health and infirmity that makes the possessor miserable, and long life instead of a blessing a curse.

Nothing will so contribute to the attainment of old age and a happy old age at that, as early and faithful obedience to the laws of health and the consciousness of a well spent life. Riches and old age do not insure happiness, neither do poverty and old age always produce misery.

The happiest old people we have ever seen are the healthiest and the most benevolent. Selfishness is not and never can be compatible with hap-

piness. Given health, or even in the want of it, the consciousness of having lived a life of noble deeds, will always be a solace and a source of joy to the aged.

Hence, to reach a happy old age, the parent should plan for it for the child—should early teach not only the possibility and desirability of such an experience; the deeds and course of life that prevent it, but the only and surest road to this enviable condition. When the laws of health are trampled under foot in early life, if life is not forfeited at once as the penalty, the infraction will have to be condoned for later in life. These laws are inexorable as the laws of the universe, and their violation is sure in time to be followed, sooner or later, by punishment.

It is the duty—the imperative duty—of all to let in all the sunshine possible upon the lives of those about us. Moral and material sunshine, in all the stages of life conduces to health and happiness, and to a good, ripe old age.—*Journal of Health.*

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MEANS TO PREVENT THE SPREAD OF SCARLET FEVER AND DIPHTHERIA.—As soon as any person is taken sick with scarlet fever, or diphtheria, select a room as remote as possible from the rest of the family.

Remove from the room all unnecessary furniture, rugs, and hangings, then have the patient placed in this room and not allowed to leave it while sick.

Allow only necessary attendants to enter this room.

Keep all other people out of the room and away from those who attend the patient.

Persons who live in the house, or have lived in the house during any part of the disease, must not go to

school, church, or to any public gathering, nor to any house where there are children.

Immediately disinfect every article which is taken from the sick room.

To disinfect dishes, boil them in common water for half an hour.

To disinfect bed clothes, the patient's clothing, towels, napkins, handkerchiefs, and other similar articles:—Before removing them from the sick room, place them in a tub, and soak them for half an hour in a *weak solution of carbolic acid made by mixing two and a half ounces of pure carbolic acid with one gallon (four quarts) of water.* Then remove the clothes from the room and boil them in common water for half an hour.

Burn all of the food which the patient leaves.

All discharges from the nose, mouth, kidneys and bowels must be received into vessels containing a *strong solution of carbolic acid which is made by mixing five ounces of pure carbolic acid with one gallon of water.* The discharges must be allowed to remain in this solution for one hour before being thrown into the water closet or privy.

In case of death, wash the body with the strong carbolic solution. The burial must be private. After the patient has recovered, or if the patient dies, after the body has been removed, disinfect the room which the patient has occupied in the following way:—Remove from the room and boil all crockery, silver or plated ware; all cotton, linen or woollen articles which have been in the room must be soaked in the weaker solution of carbolic acid for half an hour and boiled, as previously directed. Open the windows and allow the dust in the room to settle. Then wash the woodwork, floors,

windows and furniture with the weaker solution of carbolic acid, made by mixing two and a half ounces of pure carbolic acid with one gallon of water. Be especially careful to wash the dust from over the doors and windows. Remove all paper from the walls and burn it. Then either whitewash, paper, or paint the walls and ceiling. All bed-ticking, mattresses, pillows and all upholstered parts to furniture must be sponged with the weaker carbolic acid solution, and then taken out and thoroughly beaten and brushed. Finally, after these directions have been carried out, the room should be thoroughly aired for two days, by opening the doors and windows.

Do not allow any child who has had scarlet fever to attend school until four weeks after the disappearance of the eruption.

Remember that canker rash, scarlet rash and scarlatina are the same as scarlet fever and the same precaution must be used. Severe forms of scarlet fever may be caught from mild cases.

In diphtheria all secretions from the nose and mouth must be received upon cloths which can be burnt, or into a cup which can be disinfected with the stronger solution of carbolic acid.—*Recommended by the Board of Health of New Haven, Conn.*

THE NEW QUARANTINE STATION AT THE ENTRANCE TO DELAWARE BAY.—It will be remembered that Congress at its last session appropriated a considerable amount of money for the equipment of seven quarantine stations, five for the Atlantic coast and two for the Pacific. Of this appropriation about \$75,000 was assigned for the establishment of a thoroughly

equipped station for the protection of the Delaware Bay and River. Heretofore, the only safeguard against the introduction of contagion below the Lazaretto has been the little hospital of the United States Marine Hospital Service, near Lewes, simply designed for the treatment of sick or wounded seamen, with no adequate provision for the isolation of those suffering from infectious diseases. So well has this service been administered, however, that it has on several occasions, detained and disinfected pest-laden vessels and their crews, and thus stayed at the threshold causes which might have resulted in disastrous epidemics had they gained admission. At or near this point, the Legislature of Delaware has offered to cede to the United States the land necessary for the proposed buildings and appurtenances. The Secretary of the State Board of Health of Pennsylvania, Dr. Benjamin Lee, has been designated a commissioner on the part of the United States, to meet commissioners appointed by the State of Delaware, and, in conjunction with them, to locate and fix the boundaries of this reservation. This preliminary will be speedily settled, and work will be begun at an early date. The fumigating steamer for the station is now in process of construction at the Pusey & Jones Company's extensive works, at Wilmington, Del.

ADULTERATED FOOD AND DRUGS.—The Massachusetts State Board of Health in its monthly bulletin makes some striking revelations respecting the food market in that Commonwealth. The analysis made by the Board in April shows that of 522 articles of food or of drugs examined,



THE STATE BOARD OF HEALTH OF PENNSYLVANIA

1. J. H. McCLELLAND, M.D.

2. PEMBERTON DUDLEY, M.D.

3. HOWARD MURPHEY, C.E.

205 were more or less adulterated. Among the more notable instances noted are : Of 258 samples of milk examined, 122 were adulterated or found to vary from the legal standard. Of 5 samples of lard, all were adulterated ; 11 out of 59 specimens of spices fell below the standard, as did also 11 out of 16 samples of maple-syrup, and 9 out of 19 samples of maple-sugar. In the case of molasses, of 28 samples 8 were adulterated, while 11 out of 18 samples of vinegar were found to be so treated.

MEANS TO PREVENT THE SPREAD OF TYPHOID FEVER.—The New Haven, Conn., Board of Health issued the following :—

Have the patient sleep alone. Burn all food left by the patient.

Boil all dishes for fifteen minutes immediately after the patient has finished using them.

Clothing removed from the patient and bed clothing should be disinfected by soaking them for half an hour in a *weak solution of Carbolic Acid made by mixing two and a half ounces of pure carbolic acid with a gallon of water.* Then remove them from this solution and boil in common water for half an hour.

All discharges from the kidneys and bowels must be received into vessels containing about a pint of a *strong solution of Carbolic Acid made by mixing five ounces of pure carbolic acid with a gallon of water.* The discharges must remain in the disinfecting solution one hour before being thrown into the water closet or privy.

All persons who handle or have any thing to do with the patient should wash their hands repeatedly with soap and water and pay great attention to cleanliness.

STATE BOARD OF HEALTH

AND

VITAL STATISTICS,

OF THE

COMMONWEALTH OF PENNSYLVANIA.

SECRETARY,

BENJAMIN LEE, M. D., of Philadelphia.

MEMBERS,

PEMBERTON DUDLEY, M. D., of Philadelphia.

J. F. EDWARDS, M. D., of Philadelphia.

J. H. McCLELLAND, M. D., of Pittsburg.

HOWARD MURPHY, C. E., of Philadelphia.

GEORGE G. GROFF, M. D., of Lewisburg.

S. T. DAVIS, M. D., of Lancaster.

BENJAMIN LEE, M. D., of Philadelphia.

PLACE OF MEETING,

Supreme Court Room, State Capitol, Harrisburg, unless otherwise ordered.

TIME OF MEETING,

Second Wednesday in May, July and Nov.

EXECUTIVE COMMITTEE,

PEMBERTON DUDLEY, M. D., Chairman.

HOWARD MURPHY, C. E.

JOSEPH F. EDWARDS, M. D.

BENJAMIN LEE, M. D., Secretary.

Place of Meeting,

(Until otherwise ordered).

Executive Office, 1532 Pine St., Philad'a.

Time of Meeting,

Third Wednesday in January, April, July and October.

Secretary's Address,

1532 Pine Street, Philadelphia.

Bureau of Registration and Vital Statistics.

Department of Internal Affairs,

State Capitol, Harrisburg.

State Superintendent of Registration of Vital Statistics.

BENJAMIN LEE, M. D.

SOME OF THE WORK DONE AT
JOHNSTOWN BY THE STATE
BOARD OF HEALTH.

Report of Chief Medical Inspector Matthews.

JOHNSTOWN, Pa., July 9, 1889.

DR. BENJ. LEE, Secretary, State
Board of Health.

DEAR SIR:—I have the honor to submit the following report on the methods, plans and character of work done by the Deputy Medical inspectors of the Board at Johnstown and surrounding boroughs.

The city and surrounding boroughs have been divided into twelve districts, and a deputy medical inspector placed over each district. The duty of these medical inspectors is to see and direct the work in their particular district, make daily reports to us of amount and character of work done, with suggestions how the most work can be accomplished in the least time in their particular district. Each inspector has several gangs of men, with foremen over each, under his direct command. Each inspector is required to establish headquarters where disinfectants, information, etc., can be sent him; besides this, a number of substations in each district have been established where disinfectants are furnished. Placards have been placed at different points calling the attention of people to those places where they can get these disinfectants free. Great demands are made for these from every station.

The work of the inspector consists in making a daily round of his territory and reporting to us everything that is not in a sanitary condition. Seeing to and directing the removal of all putrefying and decaying vegetable and ani-

mal matter. Disinfecting all places needing disinfecting. Making house to house inspection and directing the people what to do, and how to disinfect cellars, yards, privies, etc. In one word, doing everything in their power to render their territory in as perfect sanitary condition as possible.

The work of cleaning the cellars has been a difficult one, but the work is now progressing very rapidly and it will only be a few days until those that are in a bad sanitary condition will be cleaned. Cellars are not only cleaned but thoroughly disinfected every few days. People are advised to do this themselves as well as to whitewash cellars, and it is remarkable how willingly people carry out our instruction in these matters. Quick lime and Chlorinated lime are used in great quantities for disinfecting purposes. Greater demands are made for these two disinfectants than any others.

Besides the twelve medical inspectors an inspector of Camps has been appointed, his duty being to look after and see that the camps are kept in perfect sanitary condition.

Under your instructions a sanitary medical survey has been completed by our inspectors. This survey includes all the flooded district of Johnstown and vicinity, extending from Nineveh on the west to South Fork on the east. The survey shows the condition of every family, as to sickness, over-crowding, sanitary condition of cellar, yard, privy, water supply, etc.

The erection and disinfecting of public water closets has been a feature of our work that has claimed considerable attention. A force of carpenters was detailed on purpose for this work, and these men have pursued

their work until more than fifty public water closets have been erected. It is now found that many of the first water closets, that were erected, have to be moved and new vaults excavated. A special corps of men under a competent foreman has been detailed to disinfect all water closets each day and see that they are kept in proper condition. Another important feature of the work has been the detailing of gangs of men of from six to eight each with carts for the collection and destroying of garbage, also gangs of men to collect and destroy all old clothing, bedding and all matter of an offensive character. The force at no time, including inspectors, clerks, foremen, cooks, messengers, drivers of carts and wagons, and laborers has exceeded 285 men.

The present force consists of

- 5 Medical Inspectors.
- 7 Clerks.
- 11 Foremen.
- 4 Cooks.
- 6 Messengers.
- 120 Laborers.

The teams at work are as follows :

- 5 Two-Horse Teams.
- 2 One-Horse Team.
- 18 Carts.
- 3 Saddle Horses.

The present force of teams and carts is larger than at any previous time, but these teams can be used to advantage owing to the distance this material must be hauled.

Permanent quarters have been established for the accommodation and boarding of the forces employed by the State Board of Health. The Camp is called Camp Mack in honor of the man who has been placed in charge and who has done so much towards making our work so successful. I

might also mention that all animals are carefully looked after by a competent man, comfortable sheds having been provided for them.

Very respectfully submitted,

W. E. MATTHEWS, M.D.

Chief Medical Inspector.

THE STATE BOARD OF HEALTH AT
JOHNSTOWN.

OFFICIAL HEALTH BULLETIN, NO. 7.

STATE BOARD OF HEALTH, }
JOHNSTOWN, PA., July 23, 1889. }

Since the issue of the last bulletin the only departure from the remarkably high standard of health which marked the period comprising the first three weeks after the flood in this valley, has been a tendency to diarrhoeal affections, often assuming the form of cholera morbus, less frequently than that of mild dysentery.

This is attributable to three causes—first, the intense heat which has succeeded the unusually low temperature of the month of June; secondly the too free use of fruits and vegetables, often unripe or over-ripe, after the enforced rigid diet which prevailed immediately after the disaster, coupled with unusual exposure to the sun's rays during the day and to dampness at night; thirdly, to the immoderate indulgence in intoxicating liquors which has prevailed since the removal of the judicial injunction on the sale of these beverages. Johnstown, however, is not the only place in the country where this tendency to bowel disorders has manifested itself, and it must be said that they have here generally yielded readily to appropriate treatment. The advantage which has resulted from the use of aromatic sulphuric acid, also called elixir of vitriol, in these cases, leads the Board to suggest that it would be well for every family to supply itself with a small phial of this remedy, and for each member of the family to take five drops once a day in a tumbler of water as a preventive. Of this strength it makes a delightful, refreshing drink, and should any trifling impurities have crept into the water through breaks in the pipes, it will entirely neutralize them. The fact that this tendency prevails more extensively and develops

a more serious character in Peelerville than in other sections leads the Board to temporarily condemn the use of the water from the tank on Prospect Hill for drinking and culinary purposes. During the prevalence of this condition it would be a wise precaution also to boil all water to be used for drinking.

But one case of typhoid fever now exists in the town, and that has recently been imported from Pittsburgh. Over-crowding still prevails to a serious extent in all the out-lying villages. It is hoped that this will be remedied before the advent of cold weather prevents the free ventilation which is now possible. The Board has this steadily in view in increasing the area on which portable houses may be placed, but it earnestly urges the citizens to refrain from bringing their families within the districts still proscribed. The inconveniences of tent or camp life are trifles compared with the miseries of a general epidemic of disease, such as would follow the sudden introduction of a large population into certain sections of the city.

The areas in Kernville on which the Board considers it unsafe to place portable houses have been revised, and are now as follows :

The square on the east side of Morris street, between Haines and Dibert streets.

The lots fronting on the east side of Morris street, from Dibert street to the residence of Joseph Kuntz, Esq.

The portion of the square on the west side of Morris street from the alley along lower end of Swank's Pottery down to Dibert street, including lots fronting on Morris, Dibert, and Napoleon streets.

The squares on the west side of Morris street to the hill, and from Dibert street to Haynes street.

The square from Haynes street to the river and from Napoleon street to the hill.

The lots fronting on Haynes street between Morris and Napoleon streets, and on Napoleon street from Haynes street to the river.

The lots fronting on the west side of Morris between Haynes street and the residence of Joseph Morgan.

All other parts of the South Side are now open for habitation.

The restriction is removed from the entire Seventh Ward.

Modifications of the restricted areas in

other districts have already been given to the public through the Finance Committee.

The impossibility of supplying the city lock-up with water, and its contracted dimensions, constitute it a nuisance dangerous to the public health, and the Board therefore orders its immediate improvement in these particulars, or the removal of prisoners therefrom until such time as they can be accommodated properly.

The Board is especially desirous that the citizens of Johnstown should understand precisely the ground on which it is carrying on its operations in this and other flooded regions of the State. The Board is in no sense a relief commission. The constitution of the Commonwealth expressly forbids the State authorities to expend a single dollar for the benefit of private individuals. The sole business of the State Board of Health is to take measures for the protection of the public health. With this object directly and solely in view, the immense work which the State has accomplished in the Conemaugh Valley has been prosecuted. Without the authoritative declaration of this Board that the conditions here existing constituted a menace to the public health, not a shovelful of earth could have been thrown up, not a pick could have been used, not a blast could have been exploded, *at the expense of the State.*

Enormous masses of debris have been removed—not in order to give the people an opportunity to re-establish their business or rebuild their homes, but in order to remove the bodies of drowned persons, the carcasses of animals and other putrefying matter which they concealed, and which, if left undisturbed, would undoubtedly have bred disease. The huge and densely-packed drift at the stone bridge has been rent asunder and dragged out—not in order to restore the river to its natural course, but to extricate offensive material entangled in and buried under it, which would have contaminated the water supply of cities nearly a hundred miles distant. Miles of public streets have been opened up and made passable—not in order to enable traffic to resume its course, but to create thoroughfares through which the wreckage and filth which was being removed could be transported to a safe distance. Some cellars have been cleaned—not as a gratuity to their owners, but because

the material contained in them was of so offensive a character as to make them fit places for the growth of death-bearing germs. However deeply, therefore, the members of the Board may sympathize with individual sufferers—however strongly their hearts may prompt them to render aid in special cases—the Board must be governed by this one inflexible rule—that it will authorize no stroke of work not distinctly sanitary in its object—otherwise it will be false to the purpose of its creation and subject itself to more than criticism.

In the absence of a local Board of Health, the Board, by virtue of the authority conferred upon it by the act of June 5, 1885, hereby adopts and promulgates for Johnstown and each of the neighboring boroughs the accompanying ordinance, entitled "The Model Ordinance" of the State Board of Health, "for the Better Preservation of the Public Health in Cities and Boroughs in Pennsylvania."

The Board trusts that the authorities of the several boroughs, and the people as well, will give this ordinance their serious attention, that its provisions will be cheerfully and scrupulously complied with, and that it will eventually be adopted, with such trifling modifications as local circumstances may render expedient, as the Sanitary Code of the Valley.

BENJAMIN LEE, M.D.,
Secretary and Executive Officer,
GEORGE G. GROFF, M.D.,
Member of Board.

IMPORTANT CIRCULAR OF INFORMATION OF THE STATE BOARD OF HEALTH OF PENNSYLVANIA.

Although the public health is excellent, and no danger of any outbreak of sickness is anticipated, it is important that the people of the flooded districts should be instructed as to the best means of maintaining the present condition of general good health. The STATE BOARD OF HEALTH for this purpose issues this circular.

The houses should be kept open as freely as possible, so as to dry them. It would be well to keep fires burning in all the houses to dry them and to prevent dampness. *All dampness and mould must be banished as soon as possible.* Hence all wet carpets,

cloths, blankets, etc., etc., should be washed and hung out to dry without any delay whatever. *Collections of wet carpets, blankets, etc., must not be permitted.* Cellars should be *thoroughly cleaned*, and the windows kept *constantly open*. The cellar floor should be well sprinkled with disinfectants. Be sure to clean out all the corners in the cellar *thoroughly*. Don't leave any dirt in it, or on the walls. White-wash as soon as you can get lime, not once, but several times during the summer. Boxes of air-slacked lime placed in the cellar will aid greatly in making the cellar wholesome. Clean up the yard and burn all the rubbish soon as possible. All decomposing vegetables and meats should be thoroughly burned. Disinfectants should be freely used in and around privies. It would be better to clean all the privies with an odorless excavator.

Personal cleanliness should be carefully attended to. Bathe the body daily. Eat plentifully of the best food you can secure. Keep in as good spirits as possible. Sleep in a room with the windows wide open, though draughts of air should be avoided. Beds should be supplied with blankets rather than sheets for health, and the body should always be covered at night, though but lightly when it is very warm. The clothing should be kept clean. All underclothing should be washed frequently.

Well water should not be used if contaminated. It would be well to boil all water used as a beverage or for culinary purposes before using it. It would be well for women and children who can, to go for a few weeks into the country or to the homes of friends at a distance.

By authority of the State Board of Health.

GEORGE G. GROFF, M.D.,
JOSEPH F. EDWARDS, M.D.,
Members State Board of Health.

HARMFUL WEEDS.—The unsightly growth of weeds may not be detrimental to health, but they are a ready hiding-place for slops and refuse. These become putrid and poison the air and pollute the earth. Throw nothing out to be covered by weeds. Give the sun a fair chance.—DR. J. M. SHAFFER, *Keokuk Board of Health.*

SPECIAL REPORT.

TWELFTH REGULAR MEETING OF
THE STATE BOARD OF HEALTH
OF PENNSYLVANIA.

CONCLUDED FROM PAGE 368.

The Secretary read a communication from Dr. C. O. Probst, Secretary of the Ohio State Board of Health, stating that in consequence of Dr. D. C. Campbell having given a false certificate of death, thirteen cases of Scarlet Fever had occurred at Fredericksburg, Ohio, through the removal of the corpse in transit. Dr. Campbell having certified death was due to inflammation of the lungs. Inspector Thompson was directed to investigate the matter, and his report was read. The Secretary had waited for the Board's instructions.

Resolved, That Dr. Campbell be instructed to appear before the State Board to-morrow to answer the charge, and that action thereon be postponed at present.

Sanitary Inspector Free reported that fifteen cases of Typhoid Fever had occurred at Eldred, McKean County, all of which had been traced to using water from a well there. The Secretary advised the authorities to fill this well up. In consequence of this outbreak the authorities had decided to adopt the model ordinance of the State Board.

Resolved, The action of Secretary and Inspector be approved.

A report being received to the effect that Small-Pox existed in Lebanon township, Inspector Taylor was requested to investigate same. He reported that eruption had occurred in two persons of one family there, none of which had been vaccinated. No serious epidemic being apprehended, the father of this family was allowed to continue his occupation.

Resolved, The Inspector's action be approved.

Another case reported from Kingston, Luzerne County. Inspector Taylor certified as correct. Stringent precautions were, however adopted by the authorities, and no further outbreak occurred.

With reference to nuisance at Schooley Shaft from drainage, Inspector Taylor wrote the Secretary on April 5th, that the nuisance had been abated.

An alarming outbreak of Diphtheria occurred in March at St. Petersburg. The borough authorities took prompt action at once, printing and posting instructions to prevent the spread of the disease all over the town, which resulted in the epidemic soon being brought under control.

Resolved, That ordinance be published in the State Board of Health's Report.

In consequence of the Philadelphia Board of Health having addressed a communication to the State Board to the effect that hospital rags and bandages after use found their way to rag dealers, the Secretary addressed inquiries to 125 institutions in Pennsylvania on the subject. Of the forty-eight replies received up to the present, thirty-three state that they burn their rags and bandages, three disinfect, and twelve wash them before selling.

Resolved, The Secretary's action be approved.

The Secretary submitted a circular issued by the Pennsylvania Railroad Company with respect to cleanliness, disinfection and good sanitary condition of the company's lines and property, requesting the Board's approval and any suggestions, also authority to use the name of the State Board in promulgating it.

Resolved, The circular be approved.

A complaint was read from one of the Railroad Company's Superintendents that dead bodies were removed without proper permits. The Secretary had replied and pointed out the great difficulty experienced in getting transit permits in all cases into use.

Resolved, Secretary's action be approved.

A petition signed by the general baggage agents of the several leading railroad companies submitting form of transit permit for dead bodies, and asking for its adoption was now considered. The association pointed out the importance and necessity of uniformity in the matter. The Secretary had acknowledged receipt and submitted this State Board's form of permit, asking if it required any alteration, to which the association had replied very little alteration appeared necessary in it. The Secretary pointed out certain matters in the permit with regard to disinfection which he recommended.

Resolved, That Rules 2 and 3 with regard to transportation of dead bodies be amended

so that they shall correspond with Rules 1 and 2 of the general Baggage Agent's Association adopted at San Francisco January 16, 1889, and that the Secretary be instructed to inform that authority of this action of the State Board of Health.

The Secretary reported a flagrant use of State Board of Health's name and stamp by a company in advertising cotton seed oil. He had reported the matter to the Attorney-General who had advised him thereon, and submitted the question of taking action against the company to the Assistant Attorney-General. Pending the investigation and advise of this gentleman the Board Resolved the Secretary's action be approved and the matter postponed.

Sanitary-Inspector Dudley reported a serious outbreak of Diphtheria at Gallitzin to the Secretary. The officer had investigated same and found there had been a large number of deaths at that place. He further reported the town to be without any proper water supply and without any system of sewerage, not one foot of sewer being laid in the place, and the apathy of the inhabitants. He attributed the epidemic to filth, and had furnished documents to the council and recommended dissemination of circulars with a view to urging the people to cleanliness.

Resolved, Action of the Secretary and Inspector Dudley be approved.

A communication having been received asking the State Board to endorse a petition for establishing a Chair of Forestry in the University of Pennsylvania, it was

Resolved, The same be approved by the Board.

The Secretary reported that in the early part of the present month small pox occurred at Wilkesbarre, being imported from Nanticoke. Inspector Taylor reported that prompt action had been taken by the authorities, and the Secretary had written to the Council approving of such prompt action, and sending copies of Rules for Boards of Health.

There were two cases, and both died, but no further outbreak had occurred, the disease being apparently stamped out.

Resolved, Secretary's action be approved.

A circular containing admirable regulations for placing cities in good sanitary condition had been issued by the city of Meadville Board of Health.

Resolved, That these regulations be approved.

Dr. F. B. Davidson of Fleetville, having reported a large number of cases of Diphtheria in that town and asked for circulars thereon, the Secretary had sent Dr. Davidson the circulars, and the Board resolved the Secretary's action be approved.

Resolved, That the Annual Report of the Health Commissioners of York be included in the Annual Report of the State Board of Health.

The Secretary reported that the Florida Legislative Assembly last session had passed a resolution inviting certain commissioners to visit the districts of that State which last summer were affected with yellow fever. The Supervising Surgeon General of the U.S. Marine Hospital Service had appointed him as a member of that commission which consisted of Dr. Jackson Piper, President State Board of Health of Maryland, Dr. Benj. Lee, Secretary State Board of Health of Pennsylvania.

The Commissioners visited and inspected the sanitary arrangements of the districts affected with yellow fever last year; the quarantine station and precautions adopted at the Marine Hospital Service Station at the port of Havanna, and inspected the Plant line of steamships, and had reported the result of their inspection to the Florida Legislature, suggesting such further precautions as seemed to them wise and necessary. While visiting the districts the commissioners were the guests of the railroad companies of Florida, and of cities and towns which they found necessary to visit and inspect, and were universally treated with courtesy during such visit.

Resolved, The Secretary's report be received and accepted.

The Secretary reported his appointment by the Secretary of the Treasury to act as one of the commissioners appointed to assign the limits and fix location of the proposed quarantine station at Delaware Breakwater which had been done.

Resolved, The report be accepted.

The Secretary regretted being compelled to announce the death of Inspector McKibbin, of the Schuylkill District. He had addressed a communication to Dr. W. Murray Weidman asking him to accept the ap-

pointment for that district, to which Dr. Weidman had consented.

Resolved, That Dr. W. Murray Weidman be and is hereby appointed Medical Inspector for the Schuylkill District.

As Dr. A. B. Brumbaugh had consented to his being appointed Medical Inspector for the vacant Juniata District, it was further

Resolved, That Dr. A. B. Brumbaugh be and is hereby appointed Medical Inspector for the Juniata District.

The Secretary called the Board's attention to the monthly publication of the State Weather Service. He had been in communication with regard to a modification of same, but the society reported that they had no funds available for such a purpose,

The Secretary had had a meteorological report prepared for the State Weather Service, which he suggested should be inserted in the Board's Annual Report.

Resolved, Secretary's action and suggestion be approved.

The Secretary presented accounts, covering vouchers 267 to 280, amounting to \$576.35, and it was resolved the same be approved.

The Secretary reported receipt of complaint from Preston, suburb of Montgomery, that an odorless excavating company so dumped the contents of privy wells and cess-pools as to create a nuisance. On complaint he had received notice stating that nuisance had been abated.

A complaint was received by the Board during its session to-day of a nuisance on Lake Erie Railroad Company's property at McKees Rock's station, Stow township, Allegheny County, arising from a pond of stagnant water, in extent about one and one-half acres, caused by interference with natural water course by company's works, which resulted in producing a considerable amount of malarial disease.

Resolved, That an immediate inspection of the nuisance be made.

Resolved, That a telegram be sent to Dr. W. R. Van Kirk, of McKeesport, Pa., to attend before the Board to-morrow to explain his conduct with reference to a false certificate of death he had given for a child named Frank Foley, the child having died of diphtheria, the body being disinterred and shipped to Maryland.

Resolved, That complaint from officer Patison be referred to Committee on Water Supply.

Resolved, That requisition for supplies and stationery required by the Secretary be approved.

Report of Committee on Water Supply.

It appeared from the report of Howard Murphy, C. E., that he had conferred with Mr. Richards respecting the Reading sewerage. There would be no contamination through flow of sewage into Schuylkill River. There was nothing to excite or create alarm, as the sewerage system was by precipitation. The strongest possible precautions were being taken with regard to cess-pool matter, etc., at Reading, to prevent contamination of Schuylkill River water by sewage from same.

The report was adopted.

Resolved, Board now adjourn to 8.30 this evening.

The Board reconvened at 8.30 o'clock same evening.

Whereas, Dr. J. H. McClelland, a member of this Board is about to visit Europe for the benefit of his health, it is hereby

Resolved, That he be assured of our best wishes for a prosperous voyage and safe return to his post of usefulness, and further

Resolved, That Dr. J. H. McClelland be and is hereby authorized to represent this Board during his sojourn abroad, and that suitable credentials be issued to him for that purpose.

Resolved, That this meeting be now adjourned.

SPECIAL MEETING.

ANDERSON HOTEL, June 1, 1889.

The Secretary reported that Dr. Van Kirk, of McKeesport, had appeared before a committee of the Board yesterday with reference to false certificate of death given for child, Frank Foley.

Dr. S. C. Campbell had also attended with reference to false certificate of death at Fredericksburg.

Both doctors stated that it had hitherto been their system invariably to refuse certificates for transportation of dead bodies. They also expressed regret if, through these certificates, any epidemic had been caused.

It appeared from Dr. Campbell's statement that the child in his case had really died of bronchitis (the disease was supposed to have been caused by the parents of the child), but he gave certificate believing death to be due to inflammation of the lungs.

The committee recommended that Dr. Campbell be not charged guilty, but that he be admonished as to giving certificates in future, and that Dr. Van Kirk be not censured, but cautioned to be more careful in future.

Resolved, Report and recommendations of committee be adopted, and copy of motion sent to Dr. Probst, Ohio State Board of Health.

Resolved, That Board do now adjourn.

THE ANNALS OF HYGIENE.

VOL. IV.

PHILADELPHIA, SEPTEMBER 1, 1889.

No. 9.

COMMUNICATIONS.

PRECAUTIONS AGAINST TYPHOID FEVER.

(There is so much Typhoid Fever now prevalent in Country Districts that we think it well to reproduce the following circular that has been issued by the State Board of Health.—ED.)

Typhoid fever (called also enteric fever, gastric fever, drain fever, low fever, pythogenic fever and, by the Germans, abdominal typhus) is a common and protracted disease, terminating fatally in about one case in eight or ten. We have no statistics for the whole State of Pennsylvania to show how many persons die of this disease each year, but the Secretary of the Michigan State Board of Health estimates, from the complete returns which he receives from all parts of that State, that about *one thousand persons* die each year in Michigan of typhoid fever, and that from eight to ten thousand are yearly sick from the same disease. This would equal *three thousand* deaths, and from *thirty to forty thousand* sick of this fever each year in Pennsylvania, for it is at least as prevalent here as in Michigan.

A disease which causes so much suffering and the loss of so many lives, should be understood in its nature by all intelligent persons, since sanitarians agree that it is a disease *entirely preventable* under good hygienic conditions

HOW THE DISEASE IS SPREAD OR COMMUNICATED.

Typhoid fever is believed to be caused by a special poison (contagium.) This poison, whether specific or not, may be conveyed to other persons by drinking water contaminated by discharges from the bowels of a person affected with the disease, or by leachings from the bodies of those who have died of it. Physicians now believe that *contaminated water* is the most frequent cause of this disease. The contamination must be with the fecal discharges of a person suffering with this disease, or from a graveyard in which persons dead of this disease have been buried. The disease has also been traced to contaminated milk, which has had infected water added to it, or has been kept in vessels which have been washed with impure water, or in a room adjoining one in which there has been a case of typhoid fever. In some few cases, it seems that the disease has been produced by breathing the emanations from putrid privies and from sewers. It prevails most in times of drought, in the fall of the year, especially after a period of high temperature, and when the water in wells and springs is low and the contaminations much concentrated. It is a disease constantly present in the fall of the year, in country districts which have been subject to the above conditions. Experience proves that, with

ordinary care, those in attendance upon the sick do not contract the disease directly from the patient. The poison in the fecal matter getting upon the nurse's hands may, in this way, be conveyed into the system, but not through the air breathed. Filth and bad sanitary conditions of dwellings probably increase the danger of spreading this fever which has been classed as a "filth disease."

TIME REQUIRED TO DEVELOP TYPHOID FEVER.

The interval of time between receiving the poison of typhoid fever and becoming sick therefrom varies considerably, and may be from eleven to twenty-one days, or even longer. The patient may feel exhausted, and have pains through the body, and especially headaches, for some time before he is willing to admit himself sick. Often the incipient symptoms are confounded with those of "malaria."

PERSONS LIABLE TO THE DISEASE.

The greatest number of deaths from this disease are of persons in the prime of life, and this should prompt to greater efforts to prevent the disease. But persons of all ages have it, and even though it may be of only a mild form, yet the mild form may be the means of communicating the most malignant type of the disease to others. Typhoid fever may not be, strictly speaking, contagious, *but it is certainly communicable* through infected foods and drinks.

PREVENTIVE PRECAUTIONS.

This fever being communicated through contaminated water, the principal precaution is to PROTECT THE WATER-SUPPLY. The most scrupulous care should be taken to keep the

present sources of drinking water pure, and to procure future supplies only from clean sources. The general water-supply of cities and villages is a matter of the greatest concern, and should be procured from places where there can be no probability of immediate contamination. The well-known outbreak of typhoid fever at Plymouth, in this State, where over a thousand cases and many deaths occurred, is apparently an illustration of how great a calamity may follow the fouling of a *general* water supply by the discharges of one person sick with typhoid fever. When there is no general water-supply, much may be done to protect the wells by the abolition of cess-pits, and privy-vaults, by the use of dry earth in privies and by the frequent removal therefrom of all their contents.

Great care should be taken to prevent the contamination of the water-supply by discharges from the bowels of a person sick with typhoid fever, as by drainage into wells, springs, or other water-supply, from a privy-vault, sewer, drain, or cemetery. Privies often drain into wells, unsuspected by those who use the water. Should typhoid discharges pass into such a privy an outbreak of typhoid fever among those using the water from a neighboring well would be likely to occur. If such a well were the source of the general water-supply of a city, typhoid fever might soon be epidemic there. Extraordinary care should be taken to prevent typhoid fever discharges from entering any general water-supply from a well or from a small stream. The use of water from a source likely to be infected with excreta from a typhoid fever patient should be promptly

stopped ; and great care should also be given to the milk supply.

There is good reason to suspect the water of a well whenever a vault is situated within two hundred feet of it, particularly if the soil be porous. In numerous instances fluids from excreta have leached into wells from much greater distances ; and it has been proved that a well thirty rods from a cemetery received water which had filtered through the soil of the cemetery. Dangerously contaminated water may be, and often is found to be clear and colorless, and to have no bad taste.

Since this disease is so prevalent in country places, it would be well to establish the following

RULES FOR ALL FARM AND VILLAGE HOMES :

1. *That the privy-pit be absolutely abolished*, and that the earth-closet take its place. The earth-closet costs less at first, the excreta can all be returned to the earth, *without the least offense, and at great profit* to the farmer and gardener, and besides, the earth-closet is free from most, if not all, of the dangers resulting from the use of the privy-pit, principally the contamination of the water supply, and the production of offensive and poisonous vapors.

2. That in the fall of the year, when the waters are low, only *boiled water* be used as a beverage. Boiling destroys the germs of this disease. Whenever a case of typhoid fever appears, the polluted well water must be abandoned at once, and boiled water resorted to.

When visiting in a district where typhoid fever prevails, one should drink only *tea or coffee* which has been

well boiled. People who rent houses, should be careful to ask if typhoid fever (or any other contagious disease) has been in the house within a year, and to *require a written statement of the owner or agent*.

Anything which deteriorates general good health, tends to render the system liable to disease, and in this way filth may be considered a promoter of typhoid fever. Perfect cleanliness should be enjoined in the house and all its surroundings.

In a town, sewer gases *must not be permitted to enter a house* from defective pipes, and in the country foul gases in privies must not be tolerated. *Cases of typhoid fever should be at once reported to the local board of health, and if a number occur in the same neighborhood, to the State Board of Health.*

PRECAUTIONS IN THE CARE OF THE SICK.

1. The sick chamber should be as large, airy, and as pleasant as possible, and in a part of the house where quiet can be obtained for the patient. The room should have means for free ventilation without the production of draughts ; an open fire-place with a lamp burning in it is the best means of ventilation. Unnecessary articles of furniture should be removed from the room, but it is not needed to remove the carpet.

2. No special precaution need be taken to isolate the patient from the rest of the family, but the house should be marked so that strangers may not drink the water on the premises.

3. Whenever the hands of the nurse become soiled with the excretions, they should be washed, first in a water containing chloride of lime, and

then with pure water and soap. The hands of those about a typhoid fever patient should always be washed before eating.

4. All glasses, cups, or other vessels used by the patient, should be cleansed in boiling water before being used by others, and all food or drink, touched and not consumed by the patient, should be burned or buried. *Perfect cleanliness must be enjoined.*

5. The discharges from the bowels and from the kidneys should be received on their very issue from the body into vessels charged with disinfectants, and in cities where sewers exist, thrown at once into the water-closet, but in country places these excreta, after disinfection, should be buried in the soil, at least one hundred feet from any well, and in no case should they be thrown into a running stream, nor into a privy-vault. Rags, paper, &c., which have become infected with excreta should be burned in a strong fire. It will be well in all cases of typhoid fever to place a piece of india rubber cloth, or a rubber blanket under the patient to protect the bed from the discharges.

6. All articles of the patient's clothing which are soiled, and all the sheets, towels, napkins, &c., used in the rooms, should be *boiled thoroughly*, and as soon as possible to destroy all germs which may be in them.

7. It is hardly necessary to add that in this disease, even in its mildest form, the patient should be under the care of a reliable physician.

THE CONVALESCENT PATIENT.

In this disease, the recovering person is not dangerous to his friends. He may have cheerful society. The fever usually has its seat in the bowels,

and often causes ulcerations of their walls, and on this account, for some time, the patient must be very careful of what he eats, as solid substances sometimes cause perforations of the intestinal walls, and nearly instant death. The patient must be willing to get well slowly.

BURIALS.

After death the body should be wrapped in a sheet saturated with a solution of corrosive sublimate and buried as soon as possible. At the funeral, in country places, the contaminated water should be rendered inaccessible to the visitor *by the removal of the pump-handle or by means of a conspicuous notice.*

DISINFECTION AFTER RECOVERY OR DEATH.

This work should be done thoroughly, and generally it will be best done by an intelligent person *who has had* experience in the work. Recent investigations by a committee of the American Public Health Association show that some substances, on which much reliance has been placed, are of very little value as disinfectants. Only those which the committee recommend are here mentioned.

STANDARD DISINFECTING SOLUTIONS RECOMMENDED BY THE STATE BOARD OF HEALTH.

1. STANDARD SOLUTION, No. 1.—Dissolve chloride of lime or bleaching powder of the best quality (containing at least twenty-five per cent. of available chlorine) in soft water in the proportion of four ounces to the gallon.

2. STANDARD SOLUTION, No. 2.—Dissolve corrosive sublimate and permanganate of potash in soft water in

the proportion of two drachms of each salt to the gallon.

(NOTE.—1. This solution is highly poisonous. 2. It requires a contact of one hour to be efficient. 3. It destroys lead pipe. 4. It is without odor.)

3. STANDARD SOLUTION, No. 3.—To one part of Labarraque's solution (*liquor sodæ chloratæ*—U. S. P.,) of hypochlorate of soda add five parts of soft water.

(NOTE.—Competent authority has pronounced this superior to all other disinfectants.)

STANDARD SOLUTION, No. 4.—Dissolve corrosive sublimate in water in the proportion of four ounces to the gallon, and add one drachm of permanganate of potash to give color to the solution as a precaution against poisoning. One fluid ounce of this solution to the gallon of water is sufficiently strong. Articles should be left in it for two hours.

(NOTE.—Corrosive sublimate solutions should be kept in wooden or crockery vessels.)

TO DISINFECT DISCHARGES FROM THE PATIENT.

Use standard solutions, Nos. 1, 2 or 3, keeping a pint of the solution used constantly in the vessel ready for any emergency. Let the excreta be passed directly into the solution, and then let a pint more of it be added: the whole should stand for some time before being thrown into the sewer or being buried. These discharges, containing the specific poison of the fever, *should never be thrown into or near a stream or on the surface of the ground.*

TO DISINFECT CLOTHING, TOWELS, NAPKINS, BEDDING AND SUCH TEXTILE FABRICS AS CAN BE WASHED.

Use standard solution, No. 4, *one*

ounce to the gallon of water, or use one gallon of solution, No. 1, in nine gallons of water. Let the goods soak in the solution for at least two hours—better four hours—before they leave the room. Stir them up so that the solution gets all through them. After disinfection, boil the goods thoroughly.

FOR THE DISINFECTION OF WATER-CLOSETS, URINALS, SINKS AND CESS-POOLS.

5. CARBOLIC ACID SOLUTION.—Mix one pint of carbolic acid with two and a half gallons of water.

Standard solution, No. 4, diluted with three parts of water, may also be used in the proportion of one gallon (of the solution) to every four (estimated) of the contents of the vault. Standard solution, No. 1, would require to be used gallon for gallon of the material to be disinfected. Dry chloride of lime may be sprinkled over the contents of a privy, or standard solution, No. 2, may be made up by the barrel, and four or five gallons be applied daily during an epidemic.

TO DISINFECT THE SICK-ROOM AFTER TYPHOID FEVER.

The room in which there has been a case of typhoid fever, whether fatal or not, should, with all its contents, be thoroughly disinfected by exposure for twenty-four hours to strong fumes of burning sulphur, and then for several hours—if possible, for days—be exposed to currents of fresh air.

Rooms to be disinfected by sulphurous fumes must be vacated. For a room ten feet square at least three pounds of sulphur should be used; for larger rooms proportionately increased quantities, at the rate of three

pounds for each one thousand cubic feet of air space.

Hang up and spread out as much as possible all blankets and other articles to be disinfected; turn pockets in clothing inside out, and otherwise facilitate the access of the sulphurous fumes to all infected places.

Close the room as tight as possible, place the sulphur in iron pots or pans which will not leak, supported on bricks over a sheet of zinc or in a tub containing water, so that in case melted sulphur should leak out of the pot the floor may not be burned; set the sulphur on fire by hot coals or mixed with a spoonful of alcohol or petroleum and then lighted by a match; be careful not to breathe the fumes of the burning sulphur, and when certain the sulphur is burning well, leave the room, close the door, and allow the room to be closed for twenty-four hours.

SOME OF THE HYGIENIC ADVANTAGES OF MODERN CITY BUILDING WITH SPECIAL REFERENCE TO THE RESPIRATORY ORGANS.*

BY W. T. ENGLISH, M.D.,

Professor of Physical Diagnosis, Western Pennsylvania Medical College.

Three of the most important factors contributing to the maintenance of life are: air, water and food. Their relative importance to existence may be illustrated by the estimate, that life may continue three weeks without food; three days without water; and only three minutes without air. The respiratory cycle is completed every three or four seconds, and the inspired

air is expelled from the lungs. Notwithstanding this rapid removal of the air it is constantly in communication with the blood. In preserving the health of the individual, no more important auxiliary can be called to our aid than pure air. In crowded cities, where the oxygen consumption is rapid, and the contaminations in their extremity the question for the sanitarian to ponder over is, "How shall we secure the maximum purity, with the minimum oxygen waste?" The question becomes momentous when we realize that one-fourth of the inhabitants of the world live amid the city environments. The majority of this portion of the population are so involved in the struggle against threatening squalor, or the greed for gain, that they neglect or ignore the more common hygienic laws, and by such disregard contribute to the contaminations. Obviously, other difficulties arise. Filth and rottenness are not distresses to some people, because they are part and parcel of their heritage. From birth they have known nothing better. It is where decency and cleanliness are elevated into the necessities of existence, that men are taught loathing for foul air, and are emulous of bright surroundings. The highest appreciation for cleanliness and pure air is secured through the experience of its benefits. City life does not afford this experience to any advanced degree. A certain amount of impurity is co-existent with city life. It may seem pessimistic to say that evils exist in the city which are unchangeable; but it is not worse than an acknowledgement that for some diseases there are no known remedies.

It may be of interest, however, to us and of profit to all, to consider if in

* Read before the State Sanitary Convention at Pittsburgh.

modern city building there has not been progress toward a higher sanitary plane. It will appear in a comforting degree to the advantage of those who assiduously labor in behalf of their thoughtless and indifferent, if not vicious fellowmen, if it can be proven that their efforts are fruitful of gain, and that the palliations introduced are of practical utility. The sanitarian accomplishes much through ways and means that are remote, and for which he never receives recognition. It is a hard fact, nevertheless, that in hygienic progression in modern city building the sanitarian is the principal factor. The knowledge and observations are his, and by his approval or condemnation the evolution begins which ultimates in making the proper thing the popular thing. It may be in the thronged street or in the quiet of the laboratory that he succeeds in linking fact with thought, but somehow the idea spreads like contagion. In considering some of the advantages of modern city building, with special reference to the respiratory organs, I shall bear in mind the remote as well as immediate influences of the sanitarian.

Upon the heels of hygienic discipline and in direct consequence of the spread of sanitary knowledge, are following invention and utilization of means, by which the air is preserved in more primitive purity, the respiratory organs protected against direct injury and disease, while the cure of those already ill is facilitated. A casual view of our streets, alleys and courts will reveal the fact that there is advance in street paving. This is apparent upon our principal thoroughfares in the substitution of the Belgian block for the cobble-stone pavement. Upon the alleys and courts we

observe the smoother surface of the concrete or asphalt. The cobble-stone pavement with its myriad crevices for accumulation of offal, excreta of animals, and filth generally is giving place to the Belgian block and Asphalt. First, because of hygienic considerations, and second on account of economic profit; which may be denominated as durability and saving of horsepower. Mr. Rudolph Hering says that, "The load which one horse can draw upon an asphalt pavement would require two horses upon ordinary Belgian block, and seven and four-fifths upon bad cobble-stone." But the hygienic considerations appear in the facts, that the more regular and even surfaces of the Belgian block and asphalt, favor the spontaneous displacement of the accumulations; makes them more obvious to the street cleaner, and renders their removal easier of accomplishment. Thus the air contamination is reduced, the dust of dry weather decreased, spontaneous washing by rainfall facilitated, and cleanliness generally promoted. If the efforts of the sanitarian are not visible in this, then surely it will be admitted that his sanction at least suffers it. The asphalt upon the alleys and courts is for other than economic considerations, and indeed is in the main of hygienic importance.

Extending our observations, we note that electric railways are erected and cable cars are occupying the place once supplied by horse-cars. It is estimated that the cable lines in this city employ engines, the aggregate power of which as compared to horses is equivalent to 150 horse-power. The electric roads are claiming greater potency. About two thousand now used and the roads under contract and building will double the power, at least, in

those in course of erection. In all they give the formidable figures representing 4000 horses. These estimates become portentous, when we consider the removal of this vast army of animals from the streets in relation to its effect upon the cleanliness and hygiene of the city. The absence of offal, incident to such a herd of animals, exhalations, effluvia, and under the most favorable circumstances the dust, gas and odors innumerable, constitute only a small part of the benefits. The horse-cars have long been considered disease-breeding, being housed up hours when not in use, amid the air of impure stables and emanations from animals,—among which from the very nature of things, were those foul with disease. The street-cars by their slower progress, longer expose the occupant to the contaminations so prevalent within, and also to possible contagion. Incidental gains are secured by the building of traction lines, in that they are compelled to protect their own cable-line by a special and careful system of sewerage; in this rendering double service by decreasing the amount of sewerage and dirt, and by increasing in an inverse ratio the facilities for their removal. The celerity of travel, and the proper heating in winter are aids in protecting against exposure and together will prompt excursions into the purer air of suburban districts. Over-crowding is less common and ventilation better secured in the capacious cable and electric cars. To pursue the subject, in the influence upon the health through the medium of the respiratory organs, we must not omit the very important fact that one horse will consume as much oxygen as four vigorous men, and contribute a proportionate amount of carbonic acid gas;

and that if this vast oxygen consuming, filth contributing herd was maintained on our streets, the oxygen consumption and the exhalations of carbonic acid gas, would equal four times as many human beings as the numerical estimate of the horses or 16,000 people. The streets of every busy city will produce at certain hours as many animals as human beings or at least their equivalent in oxygen consumption, and yet we wonder sometimes why the denizens of the city suffer from oxygen waste and atmospheric impurities. The ultimate and inevitable exclusion of this vast number of animals from our streets, seems intimated by the improvements, rendering them less necessary each decade. We have hitherto been inhaling dust, bacilli, germs, the emanations and breath of animals, and our long continuance in such atmosphere has partially deprived us of the warning sense of smell. These things are passing away and by their exodus, the conditions favorable for the deposition of initial germs of disease, are reduced and the germs themselves rendered less potent and noxious. From such considerations it would seem that at least some of the conditions favorable to perfect respiratory functionation are already with us.

Another great advantage secured in modern city building is the decadence of the old methods of illumination. With the disappearance of the gas and lamp light comes the electric light which, from hygienic reasons, must supersede all other methods at present known, and by its total freedom from contamination is of specific utility to the respiratory organs. No advance in any direction in modern invention has achieved to an equal degree the

reduction of oxygen waste like to this subtle agent. It seems out of proportion to the dignity of the subject to treat it in a small way ; but the hygienic interest can be best appreciated by so treating it. The consumption of oxygen by the street lamps might appear to the casual observer unworthy a thought. It is estimated that each fish-tail gas jet will consume as much oxygen as three or four persons. There are in Pittsburgh about 5000 street lamps ; in Allegheny almost an equal number, representing in oxygen waste that which would supply a city of 35,000 or 40,000 inhabitants. This is the most trifling estimate we can make of the oxygen destruction promoted by gas illumination. In this city there is an average of five residents to each house. It is not unreasonable to claim that two fish-tail gas burners or two lamps are required for illuminating purposes, at least one-fourth of the time. This would then represent the equivalent of one-fourth the population of the city in oxygen waste within doors. But in the numerous trades and vocations necessitating continuous night work, and on cloudy or dark days, or in dingy rooms the figures will be vastly augmented. Take the composing room of one of our daily papers in which are crowded compositors—about thirty—each requiring on an average two gas jets ; and we have the oxygen waste multiplied to four times what it should be. This is not an exaggerated or overdrawn picture, for in the reporters rooms may be found the same waste. But greater still the importance when we attempt to put in figures the waste occasioned by business house illuminations ; lighting of public halls ; theatres, churches, clubrooms, and public buildings gen-

erally. These public assembly rooms employ gas jets which consume more oxygen than the occupants during their sojourn within.

There would be no apology necessary for assuming that at least a multiple of the population is represented in the oxygen expenditure from illumination alone ; without considering the vitiating contributions from imperfect combustion of the gas and poisonous emanations from lamps. The figures given above for Pittsburgh will apply to Allegheny with very slight qualification. The general results are the same in other cities and in every place. It can be safely estimated that every city wastes in oxygen at least four times as much as it properly employs.

On the other hand there is furnished by the Allegheny Light Company alone in our cities here 23,500 incandescent electric lights, and the East End Electric Light Company furnish 6,300 making a total of nearly 30,000 incandescent lights. These are for indoor illumination. In addition the Allegheny Light Company supplies to the streets and for private illumination 525 arc burners and the East End Electric Light Company furnishes 125 a total of 650 arc lights. The 30,000 electric lights are equal in potency in illuminating qualities to the same number of gas jets and therefore represent a saving of oxygen sufficient to supply 90,000 people. Add to this the economy exhibited by the arc burners, which are of a power greatly in excess amounting on the average to that of ten fish tail gas jets and each would represent thirty to fifty people, or a total of about 25,000, a grand total of saving of oxygen sufficient to supply a city of 115,000 people. From

so much advancement there must spring up optimistic views. The sanitarian approves electric light from good hygienic reasons.

It has been said that after tea and bread heat is the greatest need and sublimest comfort in every home. The improvements in heating apparatus in modern city building has been a steady progression toward perfection. Natural gas as a fuel has proved a boon beyond computation to the residents of districts in which its avails may be secured. Its advent in Pittsburgh has had a salutary influence upon the inventive ingenuity by which has been secured a more perfect system of piping and plumbing than otherwise could have been achieved. To the respiratory organs it has yielded all that can be claimed for other improvements enumerated, together with varied comforts and gains which are not within the scope of this paper to discuss. The clouds of smoke which once shut out the sky yielding a visible evidence of the contaminated air, proceeding from hundred of stacks and myriads of chimneys have been dissipated, and are substituted by an atmosphere divested of irritating ingredients, as a sequence to the employment of natural gas. As its use becomes more universal the air will be further clarified and purity assured because of the absence of any deleterious or irritating residue consequent upon imperfect combustion of the fuel. It is smokeless non-sulphurous, self-mining, self-propelling and therefore yields the minimum of dust, dirt and inconvenience. The coal wagons, ash carts and chimney sweeps will be unnecessary when it is universally employed. Even now Pittsburgh is one of the clean cities. The sun shines here as elsewhere ; and its vivi-

fying influence is one of the blessings once possessed, long sacrificed, but now regained. These are some of the profits accruing to those who are permitted to enjoy the freedom of out-door life. The advantages are even more augmented for those whose vocations or infirmities compel them to remain indoors, and for those who suffer from respiratory diseases—especially consumption—there are specific benefits. By dry air and even temperature the immature expansion of the lungs will be exchanged for full inspiration. It is a well known fact among physiologists that rarified air or air deprived of its humidity—stimulates to full and more complete respiratory acts. Full inspiration expands the lungs and life in an atmosphere which renders necessary and agreeable such perfect respiratory movements which develop the organs of respiration. The elasticity of the lung tissues will be increased ; the flow of blood in the vessels of the lungs facilitated ; the lymphatic flow expedited ; nutrition promoted ; vaporization of the secretions untrammelled ; and expectoration made easy. The nervous system will in turn be exhilarated, and good health and longevity promoted. The advantages which are sought by invalids especially by consumptives, upon high altitudes, amid dry air and constancy of temperature, may be artificially secured by the proper use of gas as fuel. The disadvantages and fatigue incident to travel will be avoided and last but not least the delights, the comforts, the solace of friends and society of home need not be sacrificed. The exercise to lungs resulting from the stimulating powers of dry atmosphere is very different in its cause and consequence from that rapid and labored respira-

tion due to exertion and muscular action in other parts of the body. The former is invigorating without fatigue, and secures with the smallest exertion more complete aeration of the blood with its pleasurable influence; the latter is due to determination of blood toward the heart and lungs, and a labored circulation within the lungs. Inactivity of the lungs is a prolific cause of consumption and we naturally hail with delight the advent of any agent which will directly or indirectly yield a benign influence in checking the progress of diseases which are represented on our death record by such formidable figures as are those of the lungs. Sudden change of temperature within doors is a prolific cause of disease of the respiratory organs. Wood and coal fires occasionally prove very irritating to the mucous membranes of the air passages while the sulphurous emanations and carbon unconsumed arising from coal fires may prove positively harmful. The ashes remaining will mingle with the air and be breathed into the lungs, and by direct and inherent irritating properties cause bronchial difficulties, or form foci for the introduction of various germs or the bacilli of tubercle. With natural gas for heating purposes we are enabled to maintain an even temperature amid which grow and develop, not only the human but also the vegetable kingdom. We may live in mid-winter surrounded by flowers in all their seasonable beauty. Nature, always compensatory, repays the effort by utilizing the carbonic acid gas exhaled by the human being for the sustenance of these plants and by the transpiration incidental to plant growth yields to the air a wholesome humidity, laden as it always is with oxygen in its nascent

state—vivifying ozone. Dr. Haller, of Berlin, was the first to observe that inhalation of super-heated air was destructive to bacilli. His experiments were conducted with dry air heated to 107 degrees Fahrenheit. Krull, of Germany, employed moist heat, but dry heat was proven most aseptic and fatal to germs. And this intimates a further utilization of the avails of natural gas in baking the air of public assembly rooms, theatres, churches, and so forth, after the departure of the audience, to destroy micro-organisms and render the air aseptic, after which the temperature may be permitted to decline to its wonted place.

It has been proposed that in all cities—large and small—there should be provided a home for consumptives. This is suggested for the dual purpose of giving the invalids all the benefits of good hygiene and special treatment as well as to avoid possible contagion. A hospital erected with a view to utilizing the aseptic advantages of natural gas and electric light, would secure the application of the most approved scientific theories. When deemed advisable the rooms could be subjected to the superheating process and extended beyond the temperature of 105 degrees Fahrenheit—at which bacilli perish—and when considered opportune the patient could be advised to inhale for some time the air at the same altitude which would render the lungs aseptic. Add to the gains already mentioned, as appertaining to heating, that of lighting by electricity—when such expedient becomes necessary—and it does appear that there is within our grasp the supply of all our needs. No consumption of oxygen; no vitiating contaminations from faulty combustion; and the negative influence on

the temperature by the electric light are deserving of high esteem. In 1883 the relative death-rate in Pittsburgh from consumption was nearly twelve per cent. In five years preceding 1889 it never reached more than the average of 9.96 per cent. If figures are significant this meagre statement would lead us to adopt an optimistic view of future city life. But the advantages here are peculiar in some respects and some are plainly indicated in this paper. In a more general way we must consider the advance in health of the modern cities. It is a noteworthy fact that in cities which have kept up their progress commensurate with the demands of increasing population, there have followed hygienic gains. In small cities the proportionate death-rate is largest. How many elements combine to achieve such results may be conjectured; but the onward march of hygiene has secured the greatest good to the greatest number. Farr's law of density which assumes that, "The nearer men live to each other, the shorter their lives" may be reversed, by statistics of future cities. This will be accomplished only by employing all the avails of physical knowledge, as they present themselves.

This does not seem like retrograde movement upon the part of cities, at least so far as health and longevity are concerned. There are those sentimentally spiritualistic to such a degree, that they are assured the world is going to the bad, physically, morally and mentally. The facts are that men are developing into mental giants too rapidly to be appreciated; and they are learning how to live well and to live long, and amid such environments naturally gravitate toward better thought and loftier purposes; and the benign influ-

ence comes through the medium of fresh air as a promulgator of physical potentiality, as well as a means of grace. In our cities are seen the foot-steps of that beauteous creation, the thought of whom mingles with every religious hope and aspiration. Cleanliness—so closely allied to the spiritual essence, that she is *next* to Godliness. The name and thought are consonant with every wholesome creed, and more than consonant with Christian faith.

BREAD.*

BY S. S. MARVIN, ESQ.,
OF PITTSBURGH.

Who has not partaken of bread? At once you answer, "Everybody eats bread." It is the staff of life. True, to us in this land of plenty, bread is the chief article of diet, but it is not so in every land. There are millions of the human race that do not know what it is. They never saw it, and were you to present a nice, white loaf to one such person, he would ask you what it was. Yet there is not a country in the world where bread in some form cannot be found.

In lands where wheat flour is not known, or where the supply is small, bread is made from other seeds, from roots, pith of plants, the bark of trees, or even from dried flesh. As examples of this, we may mention the acorn, or horse-chestnut bread, potato, turnip, and manioc bread, the last being made from the roots of a poisonous plant that flourishes in the Carribee Islands: sago bread, made from the pith of a tree; bark bread, made in northern Europe, from the bark of various trees, and the bread of the Laplanders, in

* Read before the State Sanitary Convention at Pittsburgh.

which dried fish is used as a substitute for flour.

In China, rice is the principle article of diet. It was so in India and Japan until the Western nations introduced wheat. To-day the English are endeavoring to encourage the inhabitants of India to raise wheat and live more on bread, because it produces a stronger race of people. India wheat is no small competitor to the Western farmer in the markets of the world. It now even affects the price of wheat at our own Atlantic seaboard, and is regularly quoted in the markets of Liverpool and London.

In Australia, wheat is one of the principal crops. Africa has begun the raising of wheat, and who will say but that ere long she, too, will be one of our strong competitors in the supply of bread to the millions of continental Europe.

But Bread is our subject. The baking of bread is of pre-historic origin. Excavations conducted on the site of some of the numerous Lake Dwellings in Switzerland have resulted in the discovery of abundant evidence that the art of bread making was practiced by our ancestors as early as the Stone period.

In written history, bread is first mentioned in Genesis 18-5. Abraham, wishing to entertain the three angels on the plains of Mamre, offered to "fetch a morsel of bread." Again we find it referred to in Genesis 19-3, where we are told that in the city of Sodom, Lot entertained two angels. "He made them a feast, and did bake unleavened bread, and they did eat." Again, in the story of Joseph in Egypt, when "Pharaoh hanged the chief baker, as Joseph had interpreted to them." Genesis 40-22. And it seems

to me that the baker has been held up to execration almost ever since; perhaps in many cases justly so. In the middle ages, the baking of bread was considered as largely affecting the interests of the public, and was put under strict regulation and supervision, and these special restrictions continued to affect the trade down to very recent times.

In England, an act of Parliament was passed in 1266, regulating the price of bread, and that continued in operation until 1822, in the city of London, and until 1836 in the rest of the country.

"Adulteration: the act of debasing a pure or genuine commodity, for pecuniary profit." That bread was adulterated, there seems to be no doubt, for as far back as the reign of John, in 1203, there was a proclamation throughout England for enforcing the legal obligations of assizes as regards bread. There were strict laws made by Parliament for the punishment of unscrupulous bakers. If detected, they were placed in the pillory, or fined and imprisoned, and if all these failed to correct the evil, they, at last, were deprived of their business by the destruction of their ovens, and were compelled to forswear the trade forever.

There were probably two reasons why the baker was tempted to adulterate his bread: first, because the flour of those days was probably much inferior to the flour of to-day, for be it remembered that the process of milling has been greatly improved; then in England the flour was dark, and made from wheat grown in a damp climate, and could not be made to produce the light, white, sweet bread with which we are familiar; then the baker was not so skilled as now. The second

temptation to the adulteration of bread consisted of the fact that the price and weight of bread were regulated by law. Frequently, the profits were meagre, and illegal efforts were no doubt made to produce the legal bread, white and light, to satisfy the law and the exacting taste of customers.

Ure's dictionary, probably one of the best of the old English authorities, in speaking of the practices indulged in to avoid the law, says: "The substances now almost exclusively used for adulterating bread are water, alone, or incorporated with rice, or water and alum. Other substances are, or have been used for the same purpose. The retention of water in bread is secured by underbaking, by the introduction of rice, of potatoes, or of alum.

"Underbaking is an operation which consists of keeping in the loaf water which would otherwise escape in baking. It is therefore a process for selling water at the price of bread. The addition of boiled rice to the dough is frequently used to increase the yield of loaves. This substance absorbs so much water that as many as 116 quarter (four-pound) loaves can be made from one sack of flour.

"Alum, however, is the principal adulteration used by bakers. Its introduction into bread not only enables the baker to give to bread made from a poor grade of flour the whiteness of the best bread, but to force and keep in it a larger quantity of water than could otherwise be done. The defense set up in behalf of alum is that without it certain qualities of flour cannot be used, while with its aid, all the flour which would otherwise be of no value, is made available for human food to the great benefit of the poor, who would be the first to suffer from

an increase in the price of flour, which must result from its rejection."

Liebig, the great German chemist, in his "New Letter on Chemistry," also devotes considerable space to the adulteration of bread. Among other things, he says: "Proposals which have hitherto been made to use substitutes for flour, and thus diminish the price of bread in times of scarcity, prove how much the rational principles of hygiene are disregarded still, and how unknown are the laws of nutrition. It is with food as with fuel. If we compare the various kinds of coal, of wood, and of turf, we shall see that the number of pence paid for a certain volume of weight of these materials, is about proportionate to the degrees of heat which they evolve in burning. The mean price of food in a large country is ordinarily the criterion of its nutritive value.

"The addition to wheat flour of potatoes, starch, of dextrine, or of the pulp of turnips, gives a mixture the nutritive value of which is equal to that of potatoes or turnips, or perhaps less. It is evident that one cannot consider as an improvement transformation of wheat flour into food having only the same value as rice or potatoes."

Hassell, in his "Food and its Adulteration," speaks more particularly of aluminated bread. "The use of alum in bread," he says, "is particularly injurious. It is true, it causes the bread to be whiter than it would be otherwise; whiter than was intended by nature; but it imparts several other properties to the loaf. It hardens the nutritive constituent of the bread, and so makes it more indigestible. It enables the baker to adulterate his bread with a larger quantity of rice or pota-

toes than he could otherwise employ, and lastly, he is by the use of alum permitted to pass off an inferior grade of flour for that of superior quality."

But all this is changed now. The authorities I have quoted speak of the practices of early English bakers, not of those of the present enlightened day and generation. The only connection between them and the present is the impression which still remains on the public mind and which couples the bread making of to-day with that of ancient times when flour was poor and facilities very meagre.

After careful examination, I fail to find recorded a single specific instance of adulteration in bread for 500 years. The charges are all general, and do not prove anything. They are made by scientists upon theory, and hear-say evidence, but not upon facts. The bread of to-day is not adulterated, and the baking of it is regulated entirely by competition.

As early as 1702 the laws of England were modified as relating to the baker, and few, if any samples of bread were found to be adulterated, but the price of bread was still more or less subject to law. Now, however, I do not know of a single instance in this country, of any statutes that regulate the size, quality or price of bread, and I say, so far as this country is concerned, without fear of successful contradiction, that no baker who can read and write, and who is in his right mind, adulterates his bread. He could not do it and escape detection. The use of alum would be especially suicidal to his interests, as even a small portion of it would be sufficient to give the bread a disagreeable taste.

Both potatoes and corn meal are

used to a limited extent in some varieties of bread. So, also, are baking powders, bi-carbonate of soda, and sour milk. But these are not adulterations. They are used to a greater or less extent in all private families as well as by bakers. But even if a baker wants to be dishonest there would be nothing to encourage him. The incentive to adulterate bread is entirely gone, because the miller by his skill makes many grades of flour, some so pure and white that nothing could be whiter, and all so cheap that nothing could be cheaper. If the baker wishes white loaves, he has only to select white flour, and by skill in working the dough, he defies the good housewife to equal him.

The question has often been asked, "How do you make your bread so white?", and when the question has been truthfully answered, an incredulous expression comes over the face of the questioner, because he has in mind the traditions of 500 years and the unskilful work of the maid in the kitchen, and probably his dyspepsia preys upon his senses to such an extent that he is ready to believe that the baker of to-day is no better than the baker we read about. But with a practical experience in the baking business for more than a quarter of a century, I boldly say that such a thing as adulterated bread does not exist in the great baking industry of this country. The bakers' bread of to-day is as pure, as sweet, as wholesome, as were those famous loaves made by your grandmother, in your boyhood days, to get a slice of which, well buttered and spread thickly with molasses, was a treat for which you would gladly have walked four miles, or worked half a day at a wood-pile.

THE FUTURE OF OUR RIVERS AS SOURCES OF WATER SUPPLY.*

BY COLONEL THOMAS P. ROBERTS.
Chief Engineer of the Monongahela Navigation
Company.

Modern civilization has made it possible for a much greater density of population, in some portions of the earth, than could have existed on the same areas in ancient times, or than was possible, even, at the dawn of the present century, before the advent of the railroad and the steamship.

It certainly would not have been possible in ancient times for inland cities of the size of Paris, or Berlin, to have existed, and it is believed, by local political economists, that the population of Pittsburgh and Allegheny County, now somewhat over 500,000, could not be supported by the surrounding country within available reach by the old time system of wagon transportation. As it is now, the products of the entire continent can be made available at any point and cities are springing up entirely regardless of the capacity of the country about them as food producers, so that while the question of food supply for our cities is a matter of little concern, we are not so fortunate, in the case of many of them, as regards their water supply.

It is, indeed, remarkable, that the question of the supply of good drinking water for millions of our population should have become a problem of importance before any alarm is experienced concerning the food supply, nevertheless, such is the fact. The trouble, of course, does not originate

from an actual shortage of water, so far as volume is concerned, but arises from the new ways of living and supply of artificial wants.

Water in enormous volumes is so essential, in many branches of the arts, and the refuse, or waste, returning from the manufactories to the streams is so great, that we are simply spoiling our rivers as sources of a pure water supply.

Many of the minor streams have been absolutely unfitted for any use, and while in such cases, where the pollution comes almost wholly from manufacturing establishments, such as coal washers, etc., it may bode no evil to public health; there are cases of others which create just cause for alarm. It is to be remembered further in this connection, that the sewerage system is just dawning upon legions of the smaller cities.

Worse than manufacturing refuse, is the modern system of city water supply and sewerage, as in Pittsburgh, for instance, where the water daily furnished amounts approximately to two hundred and thirty (230) gallons per capita.*

The writer may be wrong, but has sometimes thought that the common notion that the liberal use of water in our great cities is indicative of cleanliness, is a popular delusion. Every one recognizes the great convenience of street sprinklers, bath-tubs, drains and sewers, in fact we have come to regard them as necessities; but too

*This is inclusive of a number of private pumping establishments which supply several millions of gallons daily to manufacturing establishments. In the aggregate there is pumped fully 55,000,000 gallons of water daily for Pittsburgh, (exclusive of Allegheny), or about 230 gallons per capita. No other city in America uses more water in proportion to population than Pittsburgh, excepting perhaps New York. Pittsburgh, however, forms no exception to the general rule of cities of a ratio of increase in the demand for water much in excess of the growth of their population.

*Read before the State Sanitary Convention at Pittsburgh.

frequently the very person who will subscribe for water bonds, and spend hundreds of dollars in piping his premises, considers himself defrauded when assessed for sewers, and slams the door in the face of the first sanitary engineer who criticises his plumbers work. A meter system for water in our cities, would, no doubt, be the means of closing leaky spigots, and thereby, in that one item alone save half the wastage of water, and while it would be a good thing, financially speaking, its effect in reducing the contamination of our rivers would likely be small.

In the city of Rio de Janeiro, until recently, the water supply for upwards of 300,000 people, came from the mountains in an aqueduct the capacity of which would have been insufficient for the supply of a good sized ward of an American city.

There were a few public fountains, and from these the water was carried on the heads of slaves to the dwellings. Under such circumstances bathtubs, sinks, drains and sewers, could not exist; while the universal rule for closets was the dry earth—or closed jar system—emptied nightly in the harbor.*

Still the better parts of that city, so far as general cleanliness was concerned, compared favorably with the best parts of our average American cities. There were "slums" in Rio but the dirt about them was dry, excepting, we should add, during several months of the rainy season; but such things as "festering gutters," and, of course,

"sewer gas, and defective traps," were unheard of terrors.

It would, however, be folly to oppose the modern system of liberal water-supply, now so generally adopted in American cities, but nevertheless it will not do to forget the responsibilities which devolve upon us in our wholesale use of water.*

It is well established that moisture with warmth afford the requisite conditions for the rapid propagation of many forms of microscopical life, hence the opportunities for the development, and transplanting, of the organisms, is vastly enlarged where water is carelessly used, and yet with a full knowledge of these facts, we permit our creeks and rivers to become the depositories of the filth, and rubbish of our cities in the sublime faith that by dilution with uncontaminated water, oxidation and other natural operations, they will become innocuous as a vehicle for the propagation of disease.

Air and sunlight accomplish wonders for the benefit of the human race, but our knowledge of nature's processes are so imperfect that we are apt occasionally to make fatal mistakes in relying too much on her generosity. The vast number of innocuous forms

*It is stated as a fact that the "Point district" of the 1st Ward of Pittsburgh, which is wholly without sewers, and where the population is very dense and confined chiefly to miserable tenements, has never experienced any serious epidemic of disease, while very serious, and sometimes unaccountable, epidemics of Typhoid Fever and Cholera have ravaged other portions of the city served more or less perfectly with sewers. However, the case at the "Point" is somewhat peculiar; it is supposed that the river floods, which may occur several times during the year, by infiltration through the alluvial substratum dilutes, and carries off, with the decline of the waters, all the soluble impurities. In other parts of the city and in Allegheny, however, the infiltration of flood waters through the sub-soil is sometimes followed with sickness. It would not be safe to infer that the health of the Point district might be worse with sewers. Sewers, of course, mean more perfect drainage and multitudes of instances, could, no doubt, be cited where their construction has been followed with the best results.

*It is rare that an epidemic of yellow fever in Rio leaves the shipping, or the immediate neighborhood of the shores of the harbor. It would occur to the writer, who spent several years in the neighborhood of Rio that the garbage furnace system, if introduced there, might play an important part in mitigating the yellow fever epidemics.

of animal and vegetable life which enter our rivers from the sewers may bring in themselves the means for the destruction of germs which accompany them, known, or suspected of being, capable of working an injury to human beings.

This phase of the question has some argument for support—but all the desired facts are probably not determined. There will always be a chance, one would think, for stray pathogenic germs to be pumped back to the water works, or consumed, by boatmen or others. It should rather be a warning for us when we find our streams stocked with animalculæ, and developing rapidly on the food supplies which it may contain, that the conditions are favorable for some “wolves” among their numbers to be concealed in ambush—we certainly should not depend on them destroying each other.

In 1866, or 67, the late distinguished Prof. Joseph Henry, advised the introduction into this country of English sparrows because of their known insectivorous habits. He wrote this too from the same institution which contained Spencer F. Baird, as famous then, as an ornithologist, as he was later as an ichthyologist. He was perhaps led into the mistake because the birds lived in a country where “good meals” were beyond their “purse,” and were accordingly compelled to forego the gratification of their really omnivorous tastes. So we might be sometimes deceived in our microscopic “oceans,” and led into error when seeing one of the protozoa making dinner of a defunct micrococci.

We do not want any forms of life, animal or vegetable, in our drinking water. We may know enough con-

cerning them not to have misgivings in regard to the development of those species originating in pure water; that is to say, water uncontaminated with sewage matter, but their presence is always positive evidence that there is pabulum, as well, for others of which we have reason to dread.

The writer disclaims any pretensions to scientific acquirements in chemistry, or microscopical research and their pathological bearings, yet with the highest respect for the learned specialists, who are laboring in these fields, he believes they have not as yet devised any convenient or comprehensive system of standards for determining when the water of our rivers is unfit to drink. The tests for albumen and nitrates, seem of late, to be neglected at least in our local examinations too much for microscopic work, and both the microscopists and the chemists are handicapped by doing all their work in their laboratories with sealed, and unlabelled, specimens of the water. In a neighboring city there was, recently, an illustration of the imperfection of this blind-folding method, where samples of the river water from opposite the city, were compared with water taken from a point, many miles above, where no sewer exists. It so happened that the water from above the city having been found to contain specimens, we believe of entozoa, was pronounced to be more contaminated than that below. It is clear that the microscopist would never have asserted, without qualification, such a thing had he known how, and where the samples were gathered. The finding of a single objectionable specimen in the presumably purest sample would have suggested to him a

more laborious examination of the other samples, and under high powers, for the thorough examination of water requires diligent application and protracted labors.

There is needed in the study of the hygienic qualities of river water besides scientific acquirements, practical knowledge of the stream. The facts regarding the width, depth, normal and least velocities, volume of discharge of the river, position of sewers, and the character of their contaminations should all be studied, with their relative bearings before decisive opinions are expressed. The public are sometimes needlessly alarmed by the reports of the specialists, when not thus supplemented by a consideration of all the facts. All this has little to do with the future of our rivers as sources of water supply, but as all know they are continuing to become each year, more and more impure, there is little to be said on the subject save to reiterate the fact.

Regarding the quantity of sewage waters returned to our rivers, Dr. Parkes, years ago estimated the amount of *absolute* sewage it contained, to amount to about 1000 lbs. per annum for each inhabitant. No account, however, being taken of the true sewage which should be apportioned to animals, kitchen waste, slaughter houses, tanneries, etc., and that contributed by the streets. Three thousand pounds per annum, or say nine pounds of absolute sewage per day, for each inhabitant, is nearer the truth. The daily waste of water, approximating one-half of the total supply, the other half lost by evaporation, which would make, say, for Pittsburgh, 115 gallons, is mixed with the nine pounds, or nine pints of absolute

sewage, and in case of rains the dilution would be many times greater. We might pause here to ask is not this a good thing to dilute the sewage? Well that is one of the problems. We know that no quantity of white paint mixed with black will render the latter pure white—and that a very little black will go a long ways in discoloring a large quantity of white paint. It would seem a pity, therefore, to contaminate so much water—and also our streams, simply to get rid of this small quantity of real sewage—and yet that is what sewers are primarily intended for. If Waring's system of separate conduits for house drainage and storm waters, is not yet a pronounced success, his ideas are, like those of the experimentors with the storage battery system for street car propulsion, in the right track, and it is to be hoped they will ultimately succeed. It would be a matter within reasonable limits of practicability, with such a system, by chemical means to convert house sewage into useful fertilizers—and to a great extent relieve our streams of the danger of becoming propagators of disease. This may be only "theory" beset with too many mechanical difficulties—as the numerous opponents of the Waring system affirm, but why it may not, some day, become an accomplished fact, the writer has yet to be convinced.

What concerns us now is the devising of means to determine how far we may suffer our rivers to be polluted before abandoning them as direct sources of water supply. We have filter systems proposed, and many advocates for their use already. We cannot diverge to treat upon their merits; although the writer earnestly

advocates the use of filtered water always—where the supply is not drawn from a permanently clear source. A sudden local gust of rain often brings into our rivers when low, floods of foul water and mud in sufficient quantity to make the entire stream disagreeably odorous and turbid, charging it with conferva from small ponds and stagnant pools—and with the vegetation, the myriad forms of animal life it supports, and it is probable that the epidemics of diarrhœa, and other summer complaints of children are aggravated, if not sometimes directly chargeable to these apparently insignificant “mud floods in our western rivers.*

Since the clearing, ploughing and cultivation of the country our rivers are more frequently charged with mud in suspension than before the soil was broken, and it was covered with forests, and thus we have from sources in no way connected with the drainage of cities an increased responsibility in the care of our rivers as sources of water supply.

Either natural or artificial systems of filtration would free the water of these palpably evident impurities—while the claim is set forth that with proper filtration nearly all the animalculæ in water may be removed—perhaps they may, and perhaps they may not—it depending on ones sympathies, which way to think. Experience

with wells points to the system of natural filtration as being the cheapest and most perfect :—

Special examinations are required, of course, to determine for any particular place whether the well, or gallery, *i. e.*, natural system is practicable.

It is safe to take the ground that when, after thorough examination, our rivers are pronounced to be dangerous sources of water supply, it is time to stop the cause of the contamination—and it must come to this, for it never can be agreed that in the future we are to depend on filtering, or doctoring our water to make it ordinarily safe to drink. We may believe, as was shown of the river Vesle in France, which receives the drainage of the city of Rheims, that while that stream was pure above said city, and was foul immediately after passing the place, but gradually, in a few miles, by a natural process of oxygenation, it became pure again, that the same thing will occur on American rivers. It does occur, in every probability, in the case of the Ohio river, which at this place receives the sewerage of 350,000 people, and at Wheeling 90 miles below, is used without any deleterious effects, something which hardly could be the case unless the germs imparted to the stream here die before reaching Wheeling. The Ohio, with its 20,000 square miles of drainage area here, and 700,000 gallons per minute minimum discharge—or six times that of the Schuylkill at Philadelphia is too large to be seriously contaminated, or at least permanently polluted by the sewers of such a city.

Not so, however, of very many other streams—and against the case of the Vesle in France and the Thames in England—where a partial purification

*In the latter part of July, 1887, there was a sudden flood in the valley of Little Red Stone Creek, a tributary of the Monongahela, 50 miles above Pittsburgh. The river was quite low at the time. The mill dams, &c., which were swept out of the creek, emptied into the river a bed of conferva, which, in the course of a few days covered the entire river (800 feet wide) and made it vividly green in great patches of hundreds of acres in extent, covering nearly the entire river for a distance of three miles. Every specimen observed by the writer exhibited under the microscope forms of animal life. The entire mass floated regularly with the river current about two miles per day (440 feet per hour) but before reaching Pittsburgh, owing to the violence of the wind and other causes, perhaps, it became unrecognizable.

has been observed, there are recorded observations of considerable streams which flow for many miles below cities and have been pronounced to be permanently polluted.*

As a valuable aid in determining the comparative purity of river waters, the writer attaches great importance to the oxygen test as first thoroughly treated, we believe about fifteen years ago, by M. Geradin, in a paper which received a prize from the Paris Academy, and taken up by Prof. Albert Leeds. The writer had two years ago the privilege of bringing the oxygen test as a question, following the lines laid down by the learned authorities mentioned, before the society of Engineers of Western Pennsylvania—and sought to show that we had in the observation of the higher forms of fish life a conclusive criterion perhaps of the healthfulness of water; we would certainly condemn as unfit to drink any freshly drawn sample of water in which a bass, salmon, or trout could not support existence—allowance, of course, being made for temperature which should be that congenial to the fish.

Prof. Francis C. Phillips, of our Western University gives for one hundred parts or volumes, of air dissolved in water, oxygen 36 parts, the remainder nitrogen. This is, the standard, he says, of pure water exposed to air; the writer can give no figures of the minimum per cent of oxygen capable of supporting the higher forms of fish life, and these only should be considered, but believes, with an "intuitive faith"—the fortunate privilege of the laymen—that it is high enough to destroy most, if not all,

forms of life introduced into it whose habitat was oxygenless sewage waters. Prof. Phillips stated further, in the debate following the paper referred to, that some years ago a fresh water sponge developed in the reservoir supplying the city of Boston—which imparted a peculiar cucumber taste in the water, making it, if not absolutely unsafe, certainly very abominable to drink, and yet it did not appear to affect the fish. We most distinctly disclaim the attempt to apply this test excepting for the detection of such forms of life which can exist and find their pabulum in waters deficient in oxygen. The sponge in the basin at Boston, and at Philadelphia and Rochester, N. Y., as mentioned by Mr. Charles Davis, appear to have produced no injurious effect on the public health.

We must partake of some faith in this theory for we find organisms, as a rule, graduated in the scale of existence by the character of the media in which they exist. The fish in some of our streams have disappeared, it is supposed from "over fishing," when very likely, they have deserted the stream because of pollutions which would have asphyxiated them had they remained. Streams, therefore, or parts of streams, which cannot be re-stocked with game fish of varieties that formerly inhabited them—should, in the writers opinion, be avoided by the Hydraulic Engineer who is called upon to locate sites for water-works.

GOOD FOR THE SUN.—A physician in New York reports that during an epidemic of diphtheria in that city there were five times as many cases on the shady side of the street as on the sunny side.

*In such cases the fixed pollutions were probably of inorganic origin and material such as dye stuffs, or other non-putrefiable materials.

CELLAR AIR IN HOUSES.*

BY REV. E. H. SUPPLEE, PH.D.

While making a casual call upon the worthy secretary of this board, I incidentally gave some of my personal experience in reference to the "Cellar Air in Houses" in Philadelphia. As I was about to leave, he asked me if I would not put some of these plain and simple facts on paper, just as I had related them to him, and present them at the next meeting of this board. I consented to do so, but time passed without a line being written until within a few days of this meeting.

Thirty years ago my attention was especially directed to this subject from the importance of having pure air in the rooms of my private school for young ladies in the Quaker City. For obvious reasons, I shall not give the numbers or the residences to which I may refer, but will indicate their general locality.

Property owners seem to have an aversion to renting their houses for school purposes. Probably this may arise from the recollection of their own school days when scribbled walls and carved benches were so generally associated with school-rooms. So it happened that in two cases in three, I was glad to get fine large houses in the best localities, that had been occupied as boarding houses. They were respectively on Green, Arch and Spruce streets, and all near Seventeenth. The rent ranged from \$1,200 to \$2,000 per year. On special inquiry, I found that death had visited every one of these houses just before they had been vacated. Some of these visits, I now be-

lieve, were consequent upon dirt, defective drainage, and the breathing of vitiated cellar air. The houses were thoroughly cleansed and renovated before being occupied for school purposes, and in the first two instances provision made at once, (though it was summer when possession was taken), for securing fresh out-door air for the registers in all the rooms. One of the furnaces in the third and last house had a proper ventiduct; and being very busy, I left the other, thinking to introduce it in the early autumn. But an early and temporary cold wave arrived before it was attended to.

On taking possession of the first and second houses, I found the cellars in a very filthy condition, and no provision for obtaining fresh air through the furnaces. This cellar air had always been breathed by the boarders and other inmates. And I was subsequently not surprised to learn of the malignant fevers that more than once existed there. Desiring the air in the school-rooms, at all times, as pure and fresh as the external air of spring, if possible, I immediately provided for this by cold-air pipes, and devised a proper system of ventilation. The third house to which reference has been made, had been occupied by the owner who had lost his only child there. The boy died of typhoid fever. One of the furnaces in this house was of the kind called portable. It contained no cold air flue from outside the cellar. As already intimated, it was my intention to have one introduced before winter. But the cold weather came so suddenly and so unexpectedly in the early autumn, that fire was made temporarily without it. This furnace heated three rooms in the rear of the residence, in one of which the owner's

* Read before the State Sanitary Convention at Pittsburgh, Pa.

child had sickened and died. A young lady in my family afterwards occupied one of these rooms. It had been thoroughly cleansed and newly papered. She was taken sick with symptoms of typhoid fever. The part of the cellar in which the portable furnace was placed, was damp and appeared springy; but an unpleasant odor arose from the moisture: On calling the attention of the landlord to this fact, I was almost overwhelmed with surprise and amazement when told that it was from a cess-pool dug to receive the substance from the closets of two bath-rooms. The dampness of the cellar around this well, showed how fallacious was his remark, that "it was hermetically sealed." There was no sewerage in the rear of these houses into which the excrement from these closets in the bath rooms could be carried away. And this death trap had been permitted to exist for many years before I went into it, while it cost only \$13.50 to have a tin pipe to introduce fresh air outside of the cellar into the house. The lady was removed from that part of the house and recovered. A sewer was soon introduced along the street in the rear of these premises, and all the waste pipes properly connected with it. Proper ventilation was also put into the bath rooms themselves.

This is some of my personal experience with reference to the quality of air which is breathed in some of the larger and more fashionable residences in Philadelphia. In the meantime my attention was very frequently called to the subject in houses near those which I have mentioned. I have been astonished to hear of families living near me paying from \$2,500 to \$3,000 rent, without any better facilities for ventilation, drainage and fresh air than

those in which I resided. But I am not surprised to have learned of the many cases of malignant fevers, often resulting in death among their families. Wherever it has been prudent or possible, I have given the results of my own experience, and have frequently been delighted to learn that a proper system of sewerage and drainage together with the introduction of fresh air has been secured.

My experience and observations do not end here. When we come to the smaller residences, the evil seems to increase manifoldly as the size of houses decrease, until we come to the smallest and cheapest which are usually heated by stoves. With moderate-sized houses, say, of ten or eleven rooms, and renting for five or six hundred dollars per annum, I would not be surprised to find, if about nine-tenths, in Philadelphia, especially in West Philadelphia, were left without any facilities for obtaining fresh air for breathing, outside of the cellar. After closing my school, in 1884, I have spent one-half of every year at the sea shore, Cape May Point, N. J. During the winters I have rented different houses of the moderate size, just mentioned; but not one did I find in searching during the last five years with any means provided for obtaining air for the register in the rooms except through an occasional open or broken cellar window. Even with these devices you must breathe the vitiated atmosphere of the cellar. I rented only on condition that cold air flues should be introduced, which was done with trifling expense. Four of these houses, all of which were on prominent streets in West Philadelphia, have cellars in a condition but little better than my Spruce street house just described. There were in-

deed no cess-pools in the cellars ; but the waste pipes from the bath room closets leaked, and the draining was so poorly done that sewer gas was constantly perceptible. After heavy rains the cellars in two of these houses were flooded with wastes of putrid smell. Every one of these houses had been occupied for many years by different families. Sickness and death, I found, had more than once visited them. In one of them it was more inconvenient than usual to introduce a cold fresh air flue into the *rear* furnace, and I consented to go into the house without it. From this cause or from some exposure, one of my family was visited with a very malignant attack of diphtheria.

Such, in the fewest possible words, is some of my own experience and observation in the matter of impure air in our city homes. If it is said why did you select such homes, I reply that nearly *all* that were for rent on these occasions were in the same unhealthy condition. And I have good reason to believe it is so still so far as fresh air is concerned, with rentable houses of the size of those I last occupied.

So sensitive have I become to the impurities of cellar atmosphere, that I can generally tell immediately on entering a house, whether or not it passes through the registers. Frequently when I have been requested, as a minister of the gospel, to visit families in sickness, have my suspicions that the patients were breathing poisoned cellar air, been verified by inquiry and actual observation. Often when called upon to officiate at funerals in different sections of the city, have I felt, when reading the words of Job, "The Lord gave and the Lord hath taken away," that

if the departed had only been permitted to breathe more of the pure fresh air, which the Lord gives so freely and bountifully to all who will receive it, the corpse, perhaps would not now be lying in the coffin before me.

OUR STRUGGLE FOR EXISTENCE.*

BY PROFESSOR PETER T. AUSTEN.

From time immemorial it has been the custom to regard disease as a necessary concomitant of life. Many reasons have been suggested for its existence, even to the hypothesis that disease is the normal state of man, and health but an exceptional or abnormal state. But, aside from theories of this sort, we have much new and positive knowledge respecting the nature of diseases. And while it may be premature as yet to speak of all diseases as belonging to one class, yet the number of them that may be placed under a single head is so great that the public should realize what an enormous addition to our knowledge has been made through biological research.

To put it popularly, what is called disease is no longer a mysterious entity, nor are its causes usually obscure. In great part it seems to be a struggle for existence between ourselves and certain lower forms of life. Were it not for these attacking hosts, it is not at all improbable that man could easily resist injuries (unless vital organs were mechanically crippled), changes of temperature, humidity, pressure, etc., and live a life of greatly increased duration, in which physical discomfort, except from accident, should be almost unknown.

* From the *North American Review*.

What is the nature of these attacking hosts which constitute disease? We know that the seeds of many plants float about in the air, and that when they fall on suitable soil and are exposed to favorable conditions of moisture, temperature, light, etc., they germinate and grow at the expense of the air and the soil. The plant sends out its leaves and breathes the air, taking in such nutriment as its organism requires, while its roots pierce downwards in search of the nutriment that is in the soil. Every one who observes at all knows all this. He sees the floating seed of the dandelion, the whirligigs of the maple, and he wearily picks off the clinging burr which is trying to make him its carrier. He knows that rich soil, moisture, fresh air and sunlight are necessary to luxuriant plant-life. He knows more. He knows that a solution of sugar, such as a fruit-juice, if exposed to the air, soon goes into fermentation and passes from a sweet liquid into one that is alcoholic and intoxicating. He also knows that this is no new phenomenon, for the patriarch Noah proved by the most convincing experience that it was a well-known fact even in his day.

The man of the present day who has had any kind of scientific education knows that this fermentation of sugar is caused by the growth in the sugar of a minute plant, called the yeast-plant, the spores, or seeds, of which are omnipresent in the atmosphere of the temperate and tropic zones. These little seeds fall into a sugar solution that is exposed to the air and grow with great energy. Sugar is the particular food of the yeast-plant, and the carbonic acid and alcohol which are formed from the sugar during its growth are

the products of its life. If we sow a rich field with corn, we get an exuberant growth of the corn-plant. If we sow the seeds of yeast in a liquid containing sugar, we get a luxuriant growth of the yeast-plant. It is a good thing to make two blades of grass grow where one had struggled up before, and the change of the saccharine juice of fruit into wine is as well known to the housewife of to-day, who makes her blackberry wine as it was to St. Paul, who so emphatically describes the dietetic action of the yeast-plant's product.

So far the biologist and the public go easily together, but at this point the broad and well-beaten road ends, and a difficult path, beset with many obstacles, leads onward. On this the trained senses of the biologist carry him with ease through vast domains that are almost unknown to the unskilled man, and in which the latter soon loses himself, since he knows not the landmarks and has not a compass wherewith to guide his steps aright.

To speak again popularly—for this is not the place to go into the minuter details of biological science—there are certain microscopic seeds, or spores, that grow best in an albuminous soil, and the organisms resulting from them alter, decompose, or assimilate the albuminous matters in which they grow or on which they thrive. These seeds—I use the word in its broadest and most popular sense—are found widely disseminated in nature, some in the air, some in the water, and others in the soil and in our food. So universally are these minute germs distributed that it is difficult to find any object which has been exposed to air or water that does not contain more or fewer of them. The liquids and or-

ganic solids of our bodies are largely composed of substances that afford these seeds their most suitable nutriment, and our bodily warmth makes the conditions necessary for their growth most favorable. Suppose one gets a deep wound. On this fresh, raw surface rain the myriads of germs floating in the air, or they are communicated by the fingers that touch the wound, or the garments that adhere to it. Among these multitudinous seeds are some that find the conditions of nutriment, moisture, and temperature most favorable to their development, and in a short time they reproduce, reaching numbers almost beyond the power of the imagination to grasp. In consequence of this the wound does not heal; it runs, becomes foul, blood-poisoning sets in, and the man dies. In other cases, the wound heals and the man recovers.

Let us examine this again in a popular way. When the freshly-exposed surface is attacked by the invading seeds, it does not rest quietly, as does the soil when the plant seed is placed in it, but countless minute organisms, which exist in and are produced by the human mechanism, attack the foreign germs and destroy them, and so prevent their growth and reproduction. Should this protecting army conquer, the invading host is destroyed and the wound heals. Should the invaders get the upper hand, then the protecting army is disorganized and overcome, and the flesh or organ, instead of remaining a part of a delicately-adjusted mechanism, becomes mere food for the foreign life. These foreign organisms do not, like the yeast-plant, eliminate carbonic acid and alcohol, but many of them produce terrible poisons, which, mixing with the blood, are carried to

the vital centres, and so the man dies from poisoning as well as from a disabled organ.

Multitudes of these disease-germs exist. Some grow in raw-flesh; some are breathed in with the air and take up their abode in the lungs, as, for instance, in the case of consumption; some show a preference for certain parts of the intestinal tract, as in typhoid fever and cholera. Others attack the liver, and others, again, thrive best in some of the glands and on the mucous membranes, as in the case of diphtheria. The rapidity of reproduction of these lower forms of life almost surpasses belief. The *bacterium termo* (fortunately not a disease-germ) is a minute rod, which reproduces itself by breaking in two. Each half then grows larger and again breaks in two. This process goes on very quickly. Indeed, if its reproduction were unrestricted, a single *bacterium termo* would in a short time fill up a space as large as that occupied by the Atlantic Ocean.

Fortunately for us, while the disease-germs are numerous enough about us, we are provided with many means of resisting their onslaught. If, for example, they get into the blood, the white corpuscles of the blood attack and eat them up. But the balance is at best a delicate one, and it takes but little to turn it against us. There are many of these disease-germs, however, that are not easily resisted. If they find their way into our organism by inoculation, through a scratch or cut, for instance, they are invariably more or less successful in establishing a foothold within us, in which case we must succumb. We cannot be food for other organisms and at the time live for ourselves.

In the laboratory of the biologist may be seen little phials in which are contained the seeds of diseases. By the prick of a needle an animal may be inoculated with the specific disease that is named on the label of the phial, as with hydrophobia, diphtheria, or scarlet fever. This can be done with as much certainty as the farmer would sow the seeds of corn, rye, or wheat, knowing that he would get crops according to the sowing.

The majority of the diseases, it now appears, are thus explicable. All the fevers and the contagious diseases, and many of the constitutional infections, are probably to be traced to the parasitic development which I have described. These diseases are results of a struggle for existence between man and minute forms of life. If these foreign organisms, the so-called saprophytes, gain a foothold, and the conditions continue favorable to their development, the man suffers or dies.

We are not considering the ethics of the subject. We shall not discuss which has the better right to survive, the saprophyte or the man. It is possible that in the vast schemes of the Cosmos, such a small portion of which we comprehend, good and sufficient reason may exist for the victory of the saprophyte. But from our standpoint we must regard our own existence as the more important. Man must consider as inimical to himself every object and every influence that tend to shorten, endanger, or injure his life, or impair his happiness. We are at war with myriads of lower organisms which are trying to live on us, and which by so doing injure, cripple, or kill us. Wars are children's games compared to these silent, invisible, deadly enemies which are ever about

us, waiting for an unprotected spot on which to attack us. They have neither conscience nor feeling. They are the seeds of death. They respect neither sex, station or age. Their existence means misery, agony, and death to the human race. The issue is fairly before us. Let no man slight it or undervalue its magnitude. These enemies cannot be laughed or reasoned away. We cannot escape them. The most important question to-day is, How can we protect ourselves against the saprophyte?

HYGIENE OF THE TEETH.*

BY J. O. FLOWER, M.D.,
OF PITTSBURGH, PA.

There has been so much said in regard to this subject, that I will only speak of the actual facts, and practical knowledge obtained in the last twenty-five years, and will present to you to-day a subject born and raised in the heart of our city, eating and drinking as ordinary people do in this civilized community, but not subjected to the unnatural position required by the Central Board of Education, who are conducting our public school system of the present day.

This subject of illustration—his ancestors for two generations back had very poor teeth so that the experimenter in this case had much to contend against.

The teeth in particular show the debilitated condition of the spinal cord, to furnish the extremities with healthy nerve force to maintain the vigor of life, and power to perform their duties when called upon by the muscles of the face and jaws. They are either too

* Read before the State Sanitary Convention at Pittsburgh.

tender by decay of the bone structure, thus leaving the pulp or nerve exposed to heat or cold, water, air, or food, or whatever may come in contact with them, causing nights and days of torture to the human being, almost from childhood up to the age of maturity, when they should be in the prime of life, (we have to grasp like a drowning man at a straw) to sustain life, *and looks as well* by buying so much *crockery* in the shape of a set of false teeth, to go *mumbling* around for the balance of life, half masticating his food in preparation for digestion, and thus preparing that over worked organ (the stomach) for premature wreck.

Promotion of healthy denture will never be acquired until we as a class of people, adopt such rules. Substantial food from the time a child is able to hold it in its own hands. Food at the proper time. Plenty of fresh air daily, and at nights as well. With the care of a good healthy nurse, or its mother.

No confinement in school, or with studies before the age of 8 to 10 years, after that age 4 months schooling, and 8 months good muscular work in the open air, or recreation with exercise. This mode of life had demonstrated itself long ago by the ancient Romans, and the staple men in the large cities of the present day.

Seventeen public school children out of every twenty have bad teeth, and the reader thinks it is caused by the unnatural sitting position they are placed in five to six hours daily, producing curvature of the spinal column, or vertebra, causing pressure on the spinal cord curtailing its proper flow of nerve force to the extremities of the nerves. Thus depriving the teeth from a vigorous supply of life,

from the fifth pairs of nerves naturally ordained for them, I could not begin to enumerate the number of cases where the whole inferior and superior arches of teeth have been destroyed by very slight injuries to the spine.

Ward Nickelson became a confirmed sufferer from the rapid destruction of denture, caused by an upset out of a buggy. He died years after at the Homœopathic Hospital sitting in his chair, while his room was being prepared for him.

Mrs. S, had a beautiful set of teeth, was dismounted from her horse, back injured, in less than two years nearly every tooth in her jaws was destroyed by decay.

The writer could cite many like cases.

Think of the number of transient calls made on the dental fraternity by *children* to be cured in a few minutes, owing to the scarcity of time, urged by over ambitious parents and *crammed* by the teachers for some examination when passed, would receive a medal, and that medal had in many cases a companion name and age on a long box, from which no parents pride ever returned.

ADULTERATED TEA.—In the Paris shops have recently been found specimens of tea which are wholly spurious, and which, according to the *Chemist & Druggist*, were naturally brown, and had been colored bluish green, and rolled to resemble gunpowder tea. The leaves had been so trimmed as to acquire the long ovoid form of the genuine leaf. Strange to say they were found to contain small proportions of theine. They are apparently from a shrub of the *Camelia* family.

INFANTILE DIARRHŒA AND INFANT FEEDING.*

BY C. A. LINDSLEY, M.D.,
Secretary, State Board of Health of Connecticut.

What is the relation of one to the other? These are the topics which are now worrying the minds of anxious mothers, and taxing the intelligence and skill of conscientious physicians.

The prevailing belief is that the two great factors in the production of so-called "summer complaint" are a high temperature and improper food. Without a question these are two great factors—but probably not in the way that is generally supposed.

A high temperature is not the direct cause, for the reason that *nursing* babies in a high temperature rarely have diarrhœa. It is not then caused simply by the heat acting on the infant, or nursing babies would suffer equally. If we enquire about the food, it will be found that nine times in ten the food used, when the baby sickens, is cow's milk diluted more or less with water and sweetened with sugar. But if we feed babies with cow's milk prepared in the same way in cool weather they do not have diarrhœa. Cow's milk diluted and sweetened is therefore not in itself an improper food for babies, as is constantly proved by their healthy and vigorous growth when fed upon it, in cooler weather.

Does the heat of summer directly influence the milk, so changing it that it becomes an improper food? The answer is no; because if the milk is received directly from the cow in a sterilized vessel and hermetically sealed, so that it has no contact with air,

it will keep indefinitely and is not changed by any high summer temperature.

If, then, heat alone does not cause infantile diarrhœa, and if diluted milk is not an improper food for infants, and again if summer heat by its own effect does not change the milk, there must yet be some other hidden factor which makes the combination of these agencies, heat and cow's milk so dangerous to babies. Neither one alone is injurious, nor does the heat alone change the milk. What then is the solution of this problem, so important to the welfare of the little ones? Recent investigations all point in one direction, which leads to the belief that the cause of the "summer complaint" of babies is a poisonous agent *added* to the artificial food of infants. That this dangerous addition is a living germ—a micro-organism, a microbe. That when taken into the digestive organs of infants it finds there both *nidus* and pabulum for its development and multiplication and that either by its own action it causes diarrhœa or through certain of its life processes a virulent chemical poison is developed.

The disease germ is developed only under the conditions of a high summer temperature and the presence of dead organic matter. It follows, then, that the true secret of caring for the babies in hot weather, is in excluding these disease-germs from their food.

The following rule for giving an infant the "summer complaint" is infallible in hot weather:—

Expose its food before feeding for an hour in any kind of an open dish in a dirty kitchen sink—quicker, if there is a pipe from the sink to a cess-pool; or in a foul cellar in which there are decaying vegetables, or in an ill-venti-

*From the Bulletin of the Connecticut State Board of Health.

lated pantry to which the effluvia and the flies from a neighboring privy vault have free access. It will not matter whether the food be cow's milk, or goat's milk, or asses' milk, or condensed milk, or any of the patented prepared foods in the market, they all afford a good vehicle by which these disease germs may reach the babies' bowels and set up therein an intestine war.

THE SOIL AS A FILTER.—Soil ordinarily as it lies in the ground is a very efficient filter, and the water from the best of springs and wells is the purest of natural waters from a sanitary point of view; yet efficient ground filtration requires percolation through quite a wide extent of soil. There are also great differences in the make-up of soils; some filter well and some not well. Through very porous soils, through rifts in ledges, or along the surfaces of rock or clay strata, organic matter and especially the infection of typhoid fever may, and often does make its way long distances so as to pollute wells. What may we think then of the discretion of persons who use water from wells, 10, 25, or 50 feet from vaults, cesspools, and other sources of pollution,—wells the water of which plainly shows upon chemical analysis that there is a steady leaching from these places into the well.—*Sanitary Inspector*.

WILLIAM R. WARNER & CO., AT THE PARIS EXPOSITION.—There is no other exhibit of the class in the United States section to rival that of Wm. R. Warner & Co. From the globe-advertising Philadelphia merchant comes an exhibit which the native pharmaciens can look at with

both admiration and wonderment. The display is enough to make any Frenchman curious, and their arrangement such as to be above deprecatory criticism; and those Frenchmen, there could not be a people with better taste for the proper and harmonious exhibition of products. A glance through their own magnificent section of pharmacy will verify this. Readers would find superfluous a description in detail of the Messrs. Warner's essentially fine installation covering all their soluble sugar-coated pills, salts, &c. Suffice it to remark that at the Paris Universelle their exhibit is thoroughly representative, comprises all the makers' fabrications, and is decidedly an honor to the concern.—*Pharmaceutical Record*.

LAWFUL ABATEMENT OF A NUISANCE.—A man was recently brought before a police justice of Chicago, for thrashing a fellow-passenger on a street car. The man who got battered was smoking. He was requested to stop. He did not, and was thrashed. The verdict of the justice was: "The public has rights. The prisoner did perfectly right, and is discharged." The editorial comment of one of the dailies, was as follows:

"It is therefore settled, so far as a police court decision can settle anything, that a man who persists in smoking on a car where there is a woman may be thrashed by her escort, if he is strong enough, and can expect no redress. This kind of law may shock the Supreme Court, but there is considerable horse-sense in it. No man has a right to make a nuisance of himself in a public conveyance, and a company should not tolerate it.—*People's Health Journal*.

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EDITORIAL.

LAZY AND INDIFFERENT SANITARIANS.

We would earnestly ask all to read the article from the pen of Dr. English (which we publish elsewhere in this issue), as it furnishes food for most wholesome reflection. Some excellent and pleasant thoughts are suggested by a perusal of this paper, for we there learn that there is a sanitary aspect to nearly all the great discoveries and achievements of the age. We are very fond of advocating the idea that hygiene is not only a beneficent science, but that it is, in every sense, a most wholesome, most comfortable and most pleasant one. Far from opposing progress, we find that hygiene is its truest hand-maid, and, far from asking us to deny ourselves the pleasures that progression would vouchsafe to us, we find that all real, true, pleasure-giving material progress is directly in the line of hygienic advancement. Can we but make people realize and believe this fact then all will be sanitarians.

Unconsciously to ourselves, we are all to a great extent, endowed or im-

bued with a liking for hygiene, for, as we learn from the article of Dr. English, that which we grasp from a realization of the comforts it brings, at the same time carries with it benefits to our health and happiness.

But, while therefore, we are in reality sanitarians, many of us are but lazy and indifferent ones. We know, most of us, in a general way, what we should do in order that we may have health, but through indifference we fail to carry our knowledge to its logical actions. There seems to be a perverseness inherent in human nature whereby that which we should do we neglect; just as the practices of religion are, to many, irksome, so does it seem are the practices of hygiene. The idea we would make is that the world is on the right track, but the individual is more indifferent than he should be to his own welfare. We need a little stirring up. Just as we believe that "cleanliness is next to Godliness," so should we believe that the doctrines of hygiene come next to, or go hand-in-hand with the doctrines of religion, and as we observe the one so should we obey the other, in order that spiritual and physical health may abide with us and give to us the greatest measure of happiness for which we can hope in this world.

VEGETABLES IN THE CELLAR.

The time has come for our annual warning to country residents not to make the cellar a vegetable storehouse. If you do, you are living over a mine that may, at any moment, explode, and shoot up into your living rooms the germs of fatal disease. Keep nothing in the cellar (but coal) and white-wash it freely and frequently.

A LESSON FROM THE FLOODS.

From many country districts come reports of Typhoid Fever, but, *with striking, gratifying and instructive unanimity we do not receive such reports from those portions of our State that were visited by the floods.*

It would seem that the rainfall, during the past three months, has been so extremely excessive that the ground has been filled with water to a point of super-saturation, so that it was impossible for it to take up any more, thus allowing or facilitating surface drainage into drinking wells. Why then do we not hear of Typhoid Fever in the flooded districts? *Because, realizing the necessity of precautionary measures and eager to be advised and to act upon advice, the people of the flooded districts have, as a rule, either thoroughly cleansed their drinking wells or abandoned their use.*

In our own experience, several cases of Typhoid Fever have occurred, where we could assign no previous case as a cause; where we could only suppose the disease to be caused by the use of well water befouled by privy or surface drainage, but where no previous case could, by any possibility, have contributed the *specific* germ to the water in question. We are still investigating these cases, and hold our final opinion in reserve, but the question very forcibly presents itself to us whether the results of organic decomposition in drinking water may not be capable of producing Typhoid Fever, *without the presence of a specific germ derived from the dejecta of a pre-existing case.*

We do not make this assertion, but we merely suggest our thought, in the hope of eliciting further light on the subject.

FROM JOHNSTOWN.

Our reports still continue favorable from this stricken town. Since our last issue the State Board of Health has continued hard at work and its labors have been rewarded by an unusual freedom from sickness.

PUSH THE SANITARY PUBLICATIONS. The chief obstacle we have to contend with is ignorance. A knowledge and appreciation of sanitary science, and what can be accomplished by its application, are entirely lacking among the people. They exercise a remarkable zeal in avoiding things which cause sudden death, but seem to have no uneasiness concerning anything which threatens their lives or undermines their health by slow degrees. The American people consume twenty-two million dollars' worth of patent medicine annually, besides the enormous sum they expend in doctors' bills and caring for the sick, but when the city of Chicago assessed 20 cents per capita for public health, it was met with violent opposition and denounced as an extravagant expenditure.—*Simon P. Wise, M. D., President Ohio State Board of Health.*

"FROMENTINE."—A new aliment from wheat, is announced by Dr. Dujardin Beaumetz. It consists of wheat embryo, obtained as a by-product in the Schweitzer process of manufacturing flour. The germs are reduced to flour by a special process and deprived of the oil they contain. Fromentine contains a large proportion of sugar and three times more nitrogenous substance than meat, and it appears that it might advantageously replace powdered meat as a concentrated food.—*Pharmaceutical Era.*

NOTES AND COMMENTS.

A SOCIETY of Hygiene and Public Health has recently been founded in Rome.

TRUSTEEING DRUNKARDS.—The German Medical Congress has recommended that drunkenness be recognized as a reason for placing a person under trustees.

PETER D. KEYSER, A.M., M.D., Professor of Ophthalmology in the Medico-Chirurgical College, has lately been appointed a member of the City Board of Health.

DR. SAMUEL WOLFE, of Skippack, Pa., has been elected to fill the chair of Physiology in the Medico-Chirurgical College of Philadelphia. Dr. Wolfe will continue his practice in Skippack.

CHICAGO'S NEW HEALTH COMMISSIONER.—Dr. Oscar C. de Wolf has resigned his position as Health Commissioner of Chicago, after a continuous service of thirteen years. Dr. Wickersham has been appointed his successor.

DR. JOHN GUITERAS of the United States Marine Hospital Service is authority for the statement that the city of Havana has had an annual epidemic of yellow fever for over one hundred years. July, August and September are the fatal months.

DOCTOR.—“You see, wifey dear, I have pulled my patient through after all! A very critical case, I can tell you.” “Yes, dear hubby! but then you are such an excellent physician! Ah! if I had only known you five

years earlier I feel certain my first husband—my poor Thomas—would have been saved!”

A BENEVOLENT EMPRESS.—The Empress of Japan takes a great interest in the welfare of her suffering subjects. In a year she has contributed \$7,500 out of her “pin money” to assist the Tokio Female Hospital in its good work.

STABLES AS NUISANCES.—Judge Andrews, of New York, has lately decided that a stable, however well it may be built, is a nuisance in the vicinity of handsome residences, and that an action can be brought to have it removed.

FOOD ADULTERATION IN PARIS.—The director of the laboratory of the police department in Paris has been detected accepting bribes from tradesmen accused of adulterating their goods, even having established a system of blackmail based on threats of exposing adulteration.

BLACK EYE.—For “black eye,” according to the *N. Y. Medical Times*, there is nothing to compare with the tincture or a strong infusion of capsicum annuum mixed with an equal bulk of mucilage of gum arabic and with the addition of a few drops of glycerin. This should be painted all over the bruised surface with a camel's hair pencil and allowed to dry on, a second or third coating being applied as soon as the first is dry. If done as soon as the injury is inflicted, this treatment will invariably prevent the blackening of the bruised tissue. The same remedy has no equal in rheumatic, sore or stiff neck.

THE DECADENCE OF THE CIGARETTE.—We are glad to learn from the *Medical Record* that the falling off in the habit of cigarette smoking, at least in the street and other public places, is becoming very noticeable, and dealers also say that there has been of late a very great decrease in the sale of cigarettes.

HYGIENE IN CHILI.—In Chili the Government has created a "Superior Council of Public Hygiene," consisting of seven members, whose duty it shall be to advise the Government in everything that relates to the public health throughout the Republic. The Council has a laboratory for chemical analysis under its control.

THE STUDY OF CONTAGION—"The study of contagion of to-day is essentially the study of the work of parasites or minute living beings which subsist on other living beings. The contagious fevers of men and animals are now nearly all demonstrated to be the result of propagation in the system of the most minute of these living beings, the bacteria."—*Prof. Law*.

HARMLESS CANDY COLORS.—The police authorities of Paris allow the following list of coloring materials for confectioners' purposes. *Blue*—Indigo, Berlin blue. *Red*—Cochineal, Carmine, Fernambuk, Orseille. *Yellow*—Saffron, grains d'Avignon, quercitrin, yellow wood, turmeric. *Green*—Logwood with Berlin blue. *Violet*—Berlin blue with carmine.

THE PLAGUE IN ARABIA.—The south-west coast of Arabia, bordering on the Red Sea, is again the situation of a reported recurrence of the plague.

The *Lancet* of July 20, states that active sanitary measures will be enforced to prevent the spread of the disease. The dates of former visitations of the plague, at this locality, were 1853, 1874 and 1879.

ORANGES.—In less than twenty years the production of oranges in Florida has increased from nothing to 3,000,000 boxes for export. There are 150 varieties known to growers, and by care and selection the Florida orange grower may fill the markets with his fruits all the year round. Several varieties of pineapple are also successfully grown in Florida.

YOUNG AMERICA AND THE FAITH DOCTOR.—A Scranton mother, whose son had toothache, took him to a faith healer. "Look me in the eyes," said the doctor, fixing a fascinating gaze on the weeping youth. "Now your toothache has entirely disappeared. You haven't a bit of toothache about you." "You lie, I have," yelled the boy, with a fresh howl! The mother then took him to a dentist.

A FILTHY SUMMER RESORT.—The *Rockaway Journal* of June 29th publishes a communication from Dr. Chas. L. Hogeboom with special reference to the necessity of filth disposal from that town, which may be read with profit by the authorities of many other summer resorts who in like manner practice filth storage seemingly for its death-dealing effects on those who visit them. Several feasible methods are suggested in the communication, any one of which, if adopted, would greatly promote the sanitary conditions and consequent prosperity of the place.—*The Sanitarian*.

THE HYGIENIC TRAMP.—Woman (to tramp)—“I kin give you some cold buckwheat cakes an’ a piece of mince-pie.”

Tramp (frightened)—“Wha-what’s that?”

Woman—“Cold buckwheat cakes an’ mince pie!”

Tramp (heroically)—“Throw in a small bottle of pepsin, madam, and I’ll take the chances.”

MULTIPLE BIRTHS IN NICE.—According to statistics published by Dr. Berlin in the *Nice Médical*, the proportion of twin-births in Nice to the whole number of births is 1 to 7,554, and of triple births 1 to 5,575. In France the proportion of twin-births to the whole number is 1 to 101, and of triple births 1 to about 10,000. Dublin surpasses Nice, however, the proportion for twin-births there being 1 to 57.

FRENCH MODESTY.—A Parisian medical society recently appointed a committee to consider the question of a universal language of science. The report of the committee was presented in the form of three questions, upon which the society voted as follows: “Shall a universal language be adopted?” “Yes.” “Ought this to be one of the dead languages?” “No.” “Shall it be the French language?” “Yes.”

BEER PICNICS.—A probable homicide occurred on an excursion train from Atlantic City, N. J., recently. “Many of the parties on the excursion had been drinking,” said the newspaper account of the quarrel. No wonder, in the face of such occurrences, that the Baltimore Council

forbade the giving of excursions, picnics, &c., by Catholic bodies, where intoxicating liquors are sold. Many a scandal did beer picnics bring upon the Catholic name.

DR. JAMES L. CABELL, Professor of Anatomy and Surgery in the University of Virginia, died at Overton, Va., August 13th, aged 76. He was graduated in medicine at the University of Maryland, in 1834. During the war he had charge of the Confederate military hospital in Charlottesville. He was Chairman of the National Sanitary Conference at Washington during the yellow fever epidemic at Memphis, and subsequently was President of the National Board of Health.

AVOID TIGHT COLLARS.—The old-fashioned mouse-trap makes the eyes of the unfortunate mice stick out, and the modern tight collar makes the eyes of human beings protrude. The relationship of effect is shown by Dr. Foster, of the University Ophthalmic Klinik at Breslau to be more than fanciful, for the collars interfering with the normal flow of blood, cause myopia (short-sight) and that prominence of the globe of the eye for which many myopes are noted.—*Sanitary Inspector*.

DESERVED DIPHTHERIA.—The daily papers report the occurrence of a large number of fatal cases of diphtheria in a certain town in this State, where, although sanitary laws are found on the statute books, no effort is made to enforce them. Public funerals are held and the bodies of the victims are carried into places of public worship, all of which is prohibited by the health ordinances of the town. Certainly, there is abundant need in thi

State, for local health officers subject to, and under the direction of, competent central authority.

SANITARY PROGRESS.—Why is it that our State Legislatures do not take more interest in enacting laws to secure immunity from preventable diseases arising from inadequate sanitary regulations or the enforcement of existing laws? *The Sanitary News* in commenting on this subject says: Legislation seems to be the greatest obstacle in the way of sanitary progress. Science has made plain the duties of officers and citizens, but legislation is tardy in providing means for their enforcement.

BEES AND RHEUMATISM.—A remedy for rheumatism, that is said to be popular in France, consists in exposing the patient to the sting of bees. The insects are applied to the neighborhood of the affected part and the stings are repeated until a cure results. In a memoir presented to the Academy of Medicine of Paris, a report is given of over one hundred cases of acute and chronic rheumatism so treated with success. It required, however, an average of nearly three hundred and fifty stings for each case. Some patients might prefer the disease to the remedy.

THE EYES OF SCHOOL CHILDREN.—Dr. T. F. Bliss, of Springfield, O., recently made an examination, at the request of the School Board, of the eyes of the children attending the public schools of that city. The number of pupils examined was 3,707, of which 378 had some defect of vision, or some disease of the eye, or both, divided as follows: Granular ophthalmia, 13;

chronic conjunctivitis, 14; inflammation of lids, 8; strabismus, or cross-eye, 37; low vision not improved by test-glasses and less than one-fourth normal, 24. In the remainder there was defective vision which was improved by test-glasses.

THE SCARLET FEVER AGE.—The last annual report of the superintendent of health of Providence, R. I., contains an interesting table showing the number and proportion at different ages of 854 persons who were attacked by scarlet fever. The figures indicate that the disease is most likely to attack children between the second and eighth years,—over 57 per cent. being between these ages,—and that after the fifteenth year there is little liability of a person's contracting scarlet-fever. This is an important fact, which parents should bear in mind, that no effort be spared to protect the children from this disease during this period of susceptibility.—*Sanitary Volunteer*.

HOW TO BE A NOBODY.—It is easy to be a nobody and the "*Watchman*" tells us how to be one. Go into the rum-seller's den to spend your leisure time. You need not drink much, just a little beer or whiskey. In the meantime, play forty-fives, a game of poker, checkers, dominoes, or watch the bartender poison the numerous for to kill time, so that you will be sure not to read any useful papers or books. If you read anything, let it be a dime or half-dime novel. Thus keep on with your stomach full of rum and your brain shattered and head empty, and yourself playing time-killing games, and in a few years you will be either in a lunatic asylum or prison, and a nobody.

SULLIVAN IN JAIL.—The opinion has been foolishly expressed that if John L. Sullivan is obliged to undergo the sentence of a year's imprisonment that has been imposed upon him, it will affect his health. Without wishing the incarceration of any one we most emphatically assert that, as in the case of James D. Fish, (recently referred to by us) the regularity of prison life would have a most beneficial effect on Sullivan's health, provided he be allowed plenty of exercise, which, to one of his extraordinary physical development is a vital necessity.

IT'S AN ILL-WIND, ETC.—While the farmers in those sections of our State that were visited by the terrible floods of the early part of the summer have suffered most severely, yet it is with pleasure that we remind them that every cloud has its lining. In the last number of *The North American Review*, Major J. W. Powell tells us that flood waters contain vast stores of fertilizing elements, alongside of which all other fertilizers that man can use sink into insignificance. Hence, though this year's crops may have been destroyed, the flooded fields and farms may be expected to bring forth doubly next year.

CELLULOID MANUFACTURE DANGEROUS.—The French Government has ordered an official investigation into the dangers to life and other interests attending the making of celluloid. During two years three accidents, in each case having occasioned serious injury and loss of life, having occurred at factories making this inflammable material. It is manifest that some form of restriction, as

to locality, must be ordained for this kind of work. The process of making this substance involves the use of a considerable proportion of gun-cotton, which is too explosive and inflammable to be permitted to be used in thickly settled neighborhoods.

DISEASE WAS INEVITABLE.—Dr. C. O. Probst, the wide-awake Secretary of the Ohio State Board of Health, has been recently investigating an epidemic of Diphtheria in the town of Moscow, Ohio. This town has a population of 600 and, at last reports, there were 76 cases of Diphtheria, 73 among children and 3 among adults. The town enjoyed excellent Sanitary advantages, being situated high up among hills and the houses being scattered, so that there was no overcrowding; but the *hog-pens and out-houses were all filthy, not having been cleaned for years*; while the universal attendance of all the children of the town at a show in a tent furnished the means for dissemination of the disease.

BLONDES.—The process of training for a "blonde" was in Venice, in the sixteenth century, a somewhat serious one. The aspirant took dragon's blood (*i. e.*, the resinous gum of the dragon-tree), ashes, egg-shells, sulphur, orange peel, and sundry other trifles, all of which she boiled into association over a fire. With the essence of this mixture she assiduously bathed and sponged her hair. When her locks were deemed to be saturated sufficiently to dry them, she was wont to ascend to the roof of the house, and there sit in the sun, with a straw zone like the detached brim of a hat fastened round her head, to protect her from solar inconvenience. The result is

said to have extracted admiration even from Moslem strangers.—*Med. Press.*

THE AGENCY OF DISPENSARIES IN SPREADING CONTAGION.—To one who sees the often crowded waiting-room of any of the larger children's dispensaries of this city, the danger of the spread of contagious diseases through their agency seems no slight one, and they may not inaptly be called the clearing-houses for contagious disease. The existence of this evil has recently been brought to the notice of the authorities of Paris, and they have been requested to construct additional waiting-rooms for children suspected to be suffering from infectious diseases, and to delegate a medical officer to each dispensary for the purpose of making a selection of the cases, allowing only children recognized to be free from contagious disease, access to the common waiting-room.—*Med. Record.*

A USEFUL GIFT.—A citizen of Leipzig, possessed of ample means, and of the still rarer gift of knowing how to make them useful to his fellow-man, has just presented to the medical relief fund of that neighborhood two extensive estates in the Saxon Erzgebirge, specially purchased by him as places to which the poor laborer or artisan, recovering from illness, may be sent for the completion of his cure. Both estates—the one near the Schneeberg, the other near Schwarzenberg—are finely situated in a healthful, well-wooded, well-watered region, and have been pronounced, on the highest medical authority, to be admirably adapted for their purpose. The donor has made it a condition of his gift that his name be kept undivulged.—*The Lancet.*

SYSTEMATIC CHEST EXERCISE.—Dr. H. L. Taylor, in a paper before the New York Academy of Medicine, urged the importance of systematic passive respiratory movements to heighten the nutrition of the lungs and to aid in their development. The success attained from the inhalation of certain gases was due chiefly to the respiratory exercise involved. Patients with flat, narrow chests and hereditary tendencies to lung disease should daily practice enforced respiratory exercise. The chest should be slowly and fully inflated, yet without undue straining, and then slowly emptied. This process may be repeated for five minutes twice or three times daily. By daily continuing this exercise the centres connected with respiration will be educated rather than stimulated into activity, and the main vital processes be carried on in a more efficient way.

AN UNDERTAKER'S LAMENT.—A well known undertaker in conversation with a Post-Express reporter of this city said: "I would like to make a few observations on funerals. I receive calls from persons every day who order expensive funerals at prices far beyond their means. I think the custom of costly funerals is wrong. Although we undertakers profit by the foolishness of the people, we in many cases lose because the persons are not able to pay for the funerals. Neighbors will vie with each other in having expensive funerals. I have made enemies of persons whom I advised to get a cheaper coffin than they ordered. People who live from hand to hand order caskets costing \$100 or \$200 just because neighbor Jones, who has a little more of this world's good, did

so. It is an unfortunate custom."—*The Lancet*.

(This is eminently true and the worry caused by such foolish vanity is directly inimical to health.—*Ed.*)

A SAFE CORDIAL.—The Rhode Island State Board of Health Bulletin says: No one who, fatigued by over-exertion of body and mind, has ever experienced the reviving influence of a tumbler of milk, heated as warm as it can be sipped, and with or without a teaspoonful of sugar, will willingly forego a resort to it. The promptness with which its cordial influence is felt is indeed surprising. Some portion of it seems to be digested and appropriated almost immediately, and many who now fancy they need alcoholic stimulants when exhausted by fatigue will find in this simple draught an equivalent that will be abundantly satisfying, and far more enduring in its effects.

HYSTERIA IN CHILDREN.—A recent French writer (Paul Pengniesz) claims that hysteria is often produced in children under the age of 13 by abuse, falls, accidents, shocks and painful emotions. From an analysis of seventy-nine cases he reaches the conclusions that: 1. Hysteria is not rare among children. 2. The chief predisposing cause of infantile hysteria is heredity. The disorders of the perceptive faculties are among the first symptoms of the disease. 4. The symptomatology of hysteria, in either sex, is almost exactly the same with the child as with the adult. 5. Treatment is more likely to succeed in the case of a child than in that of an adult. 6. The earlier the diagnosis is made and the treatment begun the better the

prognosis. 7. The most efficient treatment is by isolation. 8. Infantile hysteria sometimes prevails as a kind of epidemic.—*Kan. Med. Index*.

THINNING OUT.—Living in the country, we are often reminded of the many analogies between all forms of organic life, be it vegetable or animal. When we found it necessary to "thin out" our "morning glory" plants and to throw many away so that those which remained might have sufficient "*vital space*" in which to grow; when we notice how the farmer plants his corn, and his tomatoes and his fruit trees at certain intervals, so that each may have the space of ground and of air that it requires for its vigorous, hearty and reproductive existence, we were forced to think how similar is the case with animal life. When we overcrowd our chicken houses, cholera and decimation is the result; is the outcome any different in the crowded and filthy tenements of our large cities. All of which furnishes food for a train of reflection ending in the inevitable conclusion that nature in her designs for the universe, intends that each human being shall have an abundance of air and soil space, all arguing towards the superior advantages of suburban over urban life.

THE PROPAGANDA OF HEALTH.—The "Propaganda of Health," in England, somewhat analogous, excepting in the end in view, to the *Congregatio de propaganda fide*, or society for propagating the faith, founded in Rome in 1622, has done more practical good, probably, than all the compulsory legislation in England. Last month it held a "public function" under the presidency of Sir Spencer Wells. The

Duchess of Westminster presented prizes and certificates to some hundreds of persons, chiefly ladies, who had distinguished themselves in a numerous series of examinations in subjects appertaining to "the health of the home," the principles of domestic economy and hygiene, elementary physiology, and "first aid." Classes have been formed, and examinations held all over England, in fashionable and aristocratic drawing rooms, as well as in the poorest parishes of the East End; mothers' meetings and minor's classes being equally within the sphere of the Society's operation.

GUARDING THE HOT-BEDS OF DISEASE.—The United States Government has inaugurated a sanitary movement of extraordinary importance and one that we earnestly hope will be pushed to a realization. The Department of State has addressed a communication to all the European Governments asking their co-operation in measures to prevent the spread of infectious diseases. The proposal is made that well known plague centers, liable from their commercial relations with the world to diffuse the germs of cholera, yellow fever and similar pests shall be declared obnoxious to humanity, and the government in whose territory they are situated shall be called upon to cleanse them to the satisfaction of an international commission appointed to regularly inspect them.

Lord Salisbury says that England will do everything in her power for the furtherance of such an object, in which she is especially interested. The fear is expressed that semi-civilized countries may not take kindly to this scheme, and we suggest, that if such be found to be the case, then the

strongest kind of *suasion* be brought to bear upon them by those nations endowed with common sense.

NOXIOUS INSECTS.—Noxious insects are more numerous and destructive now than they were fifty years ago. Where nature has a chance to work out her laws, all animals, from the highest to the lowest, do not increase beyond proper limits. Even man himself is no exception to this great law; but let a break occur in this great natural chain, and it is felt all along the line. Some species will increase enormously, while others almost entirely disappear.

Now, as insects are far more numerous than all the higher animals, it follows that if some unforeseen event takes place that favors a great increase of some noxious species, man is sure to be a great sufferer. And this state of things is exactly what is taking place to day. The reader will naturally inquire why the beneficial ones do not increase as fast as the destructive ones. The answer is, the food plant of the latter has increased enormously, and all the surroundings have favored its rapid increase, while the other, living upon animal (imago) food is entirely outstripped by the vegetable eating species.—*The Sanitarian*.

THE FOUNTAIN HEAD OF CONSUMPTION.—Pulmonary consumption is a very prevalent disease among the cattle of this country.

To illustrate, we will give one instance in this state (New Hampshire) very recently investigated by the board of cattle commissioners: In a herd of thirty cows the inspector diagnosed tuberculosis, had an infected cow killed, and the *post-mortem* exam-

ination revealed tubercles in nearly every organ of the body, including the udder. The inspector reported that about seventy-five per cent. of the herd was already infected. All, or nearly all, the cows were being milked, and the product being sold daily to a milk dealer for distribution among his customers. The dairyman himself, ignorant of the character of the disease, was bringing up a baby upon the milk of a single cow in which the disease had advanced nearly to its fatal termination.

This is only one case, but there are many others. It is time that this great danger be taken in hand by every state, as it can be, with every probability of lessening in a marked degree the annual death-rate of this terribly insidious and fatal disease.—*Sanitary Volunteer.*

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TROUBLE-HUNTERS.—In the May number of the *Chautauquan*, Dr. Flood says: "the trouble-hunter is the greatest of trouble-savers." He furnishes many illustrations. We are reminded however, of a "trouble-hunter" that the doctor did not use to illustrate his point—the sanitarian. His whole life and occupation is one of trouble-hunting, and yet no one is more emphatically a trouble-saver. Is there typhoid fever in a family or in a community? The sanitarian tests the water and condemns it; he tears up the sewers to find them defective, and in various ways makes trouble, and yet he is the greatest trouble-saver. So with yellow fever, cholera, small-pox, diphtheria, scarlet fever, and a score of other ailments. He isolates the sick, quarantines the premises, detains vessels with their human freight, disinfects and destroys

infected goods, closes the school and church, vaccinates those not protected against small-pox, and in a hundred ways is a trouble-maker. And yet who is a greater trouble-saver? People curse him to-day, but will bless him to-morrow.—*Bulletin of the Iowa Board of Health.*

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THE GREATEST DANGER FROM DRAINS.—Dr. Alfred Carpenter says: The greatest danger from drains is not in the public sewer, but in the house connections and in the private drains laid by the speculative builders. They are only occasionally used, they become all but dry at frequent intervals, and if they are not as clean as a back kitchen sink ought to be, they will in spite of all precaution, occasionally produce sewer air. They must be ventilated even more perfectly than the public sewers, and so cut off from all direct communication with the house that it shall be absolutely impossible for any of the products of decomposition if they arise to find their way inside the dwelling and carry living, growing germs with them. If these arrangements are carried into effect, those living in such houses may defy disease germs and live in perfect safety from their attacks and in the words of the Psalmist, we may say—(1) Thou shalt not be afraid of any terror by night, nor for the arrow that flieth by day; for the pestilence that walketh in darkness, nor for the sickness which destroyeth in the noonday. (2) A thousand shall fall beside thee, and ten thousand at thy right hand, but it shall not come nigh thee.

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THE FATALITY OF DISEASE GERMS.—The *vital condition* of the victim selected as their prey materially affects

their power for mischief. An apple which is sound and whole you can store, and it will keep. But what happens if it is bruised? You all know it will give way and become rotten. When whole and intact it is able to resist the germs. They have no effect upon it. The moment, however, there is a bruise, though subject to the very same influences, that part affords a soil suitable for the growth of the organism falling on it, and putrefaction at once sets in. Precisely similar is it with the human body. If kept up to a proper health standard the poisonous particles, should they light on it, have no more influence than the organic particles in the air had on the sound apple. But let the health be impaired, the constitution weakened, and the vitality lowered, then these disease germs gain an entrance, and find an opportunity to do their deadly work. Were I to represent the average vitality of the human race by a line, all above it would practically enjoy immunity from the effects of the poison, while all below it would be a prey to it.—DR. W. SIMPSON FLITT, MELBOURNE.

THE TRUE WAY TO "MAKE COFFEE."—Dr. W. Junker, the African traveller, makes the following remarks on making coffee in his recent work, "Reisen in Afrika" (Wien and Olmütz, 1889, p. 208):

"Any European who believed that the decoction of coffee-beans which he had tasted at home deserved the name of "coffee," is soon convinced of his error after sojourning for a while in Turkey, Egypt, or Arabia. He will, indeed, at first be somewhat surprised always to find some sediment in his cup, which he is apt to overlook until

he has swallowed some. But he will soon learn to sip the aromatic liquid carefully from off the sediment. . . . The proper way to prepare coffee is as follows: The beans, which should, of course, if possible, be of the very best quality (genuine Mokka), are carefully examined, and all damaged ones picked out, constituting then what is known as *el-búnn es-safî*. Immediately before use, the requisite quantity is freshly roasted and powdered, which latter is preferably done in a wooden mortar. The powder should be quite fine, like flour. Water having been brought to a boil in a suitable kettle or vessel—a certain quantity of the powder—a small spoonful for every small cupful of coffee to be drawn from the vessel—is added, the whole stirred, and the vessel replaced on the fire until the liquid boils and foams up. It is then removed and the coffee served."

THE INFLUENCE OF FLIES IN THE SPREAD OF EGYPTIAN OPHTHALMIA.—Egyptian ophthalmia is not a granular conjunctivitis or trachoma, but an acute purulent catarrh, although the former condition is often associated with it. It is epidemic in character, being rare, and only occurring sporadically in November, December and January; it increases in severity and numbers slowly but surely up to July or August, and then decreases gradually with the approach of the cold weather. There is strong tendency to corneal complications. A writer in *The Chronicle* believes he has found the cause of its epidemic character in the swarms of flies, which convey and spread the disease; the increase of the disease and of the flies coincide in regard to the season of the year and also locality, the former occur-

ring principally in the Delta and near the rivers, and being rare among the Bedouins and in the desert where flies do not abound. For the sake of information on this point he made two trips in the desert for twelve days. In temperate climes flies are of course comparatively few, and when a single specimen alights on the face one instinctively flicks it away; in Egypt the flies are in swarms, and the faces of the natives are covered with them, and Howe says they never seem to take the least trouble to brush them off. He fastened a pin to a fly and made it walk over a prepared gelatine plate, and having thus thoroughly cleansed its feet, allowed it to walk on conjunctiva and again put it on jelly, when he was able to show the presence of several forms of bacteria known to exist on the conjunctiva, demonstrating by this experiment how easily contagion might be carried by the feet of flies.

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THE AMERICAN PUBLIC HEALTH ASSOCIATION.—The American Public Health Association will hold its Seventeenth Annual Meeting at Brooklyn, N. Y., on October 22, 23, 24 and 25, 1889. The Executive Committee have selected the following topics for consideration at said meeting: 1. The Causes and prevention of Infant Mortality. 2. Railway Sanitation. (a) Heating and ventilation of railway passenger coaches. (b) Water-supply, water-closets, etc. (c) Carrying passengers with communicable diseases. 3. Steamship Sanitation. 4. Methods of Scientific Cooking. 5. Yellow Fever. (a) The unprotected avenues through which yellow fever is liable to be brought into the United States. (b) The sanitary requirements necessary to render a town or city proof against

an epidemic of yellow fever. (c) The course to be taken by local health authorities upon the outbreak of yellow fever. 6. The Prevention and Restriction of Tuberculosis in Man. 7. Methods of Prevention of Diphtheria, with Results of such Methods. 8. How far should Health authorities be Permitted to Apply Known Preventive Measures for the Control of Diphtheria. 9. Compulsory Vaccination. 10. Sanitation of Asylums, Prisons, Jails, and other Eleemosynary Institutions. Papers upon miscellaneous sanitary subjects not included in the above list will be received by the Executive Committee, subject to the requirements of the by-laws. The secretary is Dr. Irving A. Watson, of Concord, N. H.

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DIET.—*Medical classics* often gives some practical advice. Some of the latest is on diet, and in this wise: What shall we eat? This question confronts us daily. Upon its wise solution depends, to a great extent, the health and happiness of the human race. A judicious dietary is an evidence of a high state of civilization; for brain and brawn are in a general sense the outcome of the kind of food eaten, its method of preparation, and the style in which it is served and introduced into the human economy. Americans are a little astray in the matter of diet. The average table is a strange mixture of English, Dutch, French and everything else beside. There seems to be a strong tendency in human nature towards the consumption of food that is too concentrated. The old Indian chief complained that the pale faces, especially the women, were dying of too much house. The modern civilized world is dying of too much meat.

Some people are afraid to eat fruit, thinking that fruit and diarrhoea are always associated, when, if they understood the true cause of diarrhoea they would know that it was caused by eating meat. In hot weather meat putrefies very quickly, and during this process alkaloids are formed which are very poisonous, acting as emetics and purgatives. It is true that fruit eaten green or between meals will interfere with digestion and cause bowel troubles; but use fruit that is perfectly ripe at meal-time, and only beneficial results will follow. Acids prevent calcareous degenerations, keeping the bones elastic, as well as preventing the accumulation of earthy matters. Fruit is a perfect food when fully ripe, and if it were in daily use from youth to age there would be less gout, gallstones and stone in the bladder.

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CHEW WELL.—“As old as the hills,” is the injunction that we should thoroughly chew and masticate our food before passing it on into the stomach, but, old, and familiar as it is, how few obey it. The lay press and many individuals have been wont to smile at the paragraph recently going the rounds telling us that Gladstone is accustomed to chew all his food a given number of times. Now we have always held that it was and is wrong to “live by rule,” yet we firmly believe that there is a world of wisdom and happiness (because of good health) in the principle of which Gladstone’s practice is an exaggerated exposition. The digestion of food is a chemical process, and when the chemist wishes to make a solution in his laboratory, he first finely pulverizes the solid in his mortar with a pestle and then adds the dissolving liquid. Were it not for this

prior pulverization the chemical solution would be imperfect. So again, when the farmer is preparing his ground that it may furnish nourishment for the seed he will place therein, he not only turns it over with the plough, but he *breaks it up with the harrow*. Our mouths might be likened to the mortar of the chemist and our teeth to his pestle as well as to the harrow of the farmer. If we thoroughly disintegrate our food by well chewing it, the juices of digestion will have access to each and every particle of it, and we will hear much less of dyspepsia and the numerous ills dependent upon it. We may eat less in a given time, but we will get far more good nourishment out of that which we do eat.

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LEPROSY IN MADRAS.—According to census returns, the proportion of lepers amongst the population of Madras is 4.4 per 10,000 against 5.2 in Bengal and 8.5 in Bombay; but there is reason to believe that these figures fall short of the actual extent of the disease. In Madras it is on the whole slightly more prevalent in coast districts than in inland, the ratios being 4.9 in the former, and 4.4 in the latter per 10,000 of population. The proportion of lepers in the several districts ranges from 2.0 in Coimbatore to 10.5 in Madras City. The districts showing the highest ratios next to Madras are Nilgiris 8.0, Tanjore 7.0, and Chingleput, Malabar, and North Arcot each 6.0 per 10,000. The disease attacks Europeans and Eurasians as well as natives, but is most common in natives. The propagation of leprosy is no doubt largely influenced by heredity, but recent observations appear to show that it is also contagious. In localities in which lepers are at

large with the disease in an active state, and having open sores, there seems to be an increased tendency to fresh cases amongst the general population. As regards the part which heredity plays in the transmission of leprosy, we know that persons with the disease in an active state have diminished fecundity, and that mortality runs high amongst the offspring of lepers. These two peculiarities, therefore, tend to keep in check the leprous population, but I have no doubt that it is increased by contagion and probably other influences. That segregation is of value in holding the disease in check seems well established, but to be of much value in India it would require to be carried out on a more extended scale than at present.—*Surgeon-General Bidie, British Medical Journal.*

FUNERAL CARS.—The Brill Car Works, of Philadelphia, have just finished three street cars, designed to transport the dead in Buenos Ayres. The cars are unique in construction and are the first of the kind made in this country. They are first, second and third class, the first being designed to carry the body of a wealthy individual, the last the corpse of a pauper. The first class car is very handsome. The body is a rich black toned with purple, with passion flowers painted on the sides. The windows are of French plate glass. The seats, folding up against the sides, are upholstered in black plush, and the window curtains are of black cloth trimmed with gold bullion. In the forward end of the car is an altar, with silver cross and candelabra, while on either side of the altar are cathedral purple stained glass windows. The interior

of the car is finished in white and gold. The metal work is nickel plated and handsome in design. On the top nine large sable plumes are placed. The other cars are much simpler and plainer in design, and the third class car has merely a row of shelves for the coffins.

These cars are intended to run on the street car tracks in Buenos Ayres, and will be switched off on a side track nearest the house of the dead person. The body is carried on a bier to the car, placed inside, the mourners seat themselves around, horses are attached and the car proceeds on its way to the cemetery. This custom is adopted in the City of Mexico and in some cities of Central America. The only parallel among northern nations is the dead train which leaves the Gard du Nord in Paris at five o'clock every morning, carrying the bodies of paupers and unrecognized persons in the morgue.—*Philadelphia Times.*

COLOGNE DRINKING.—Dr. T. D. Crothers, in an editorial in the *Quarterly Journal of Inebriety*, July, 1889, says that the use of cologne as a substitute for spirits is very common among inebriates; generally when no other form of spirits can be procured. Recently attention has been turned to the rapidly increased consumption of cologne, both in large cities in Europe and this country, and the conclusion reached by several authorities is that cologne is becoming a drink in many circles in preference to other forms of spirits. It has been asserted that melancholia and insomnia in a case suspected of using spirits in secret is an indication of the use of cologne. Usually the cologne drinker will have a strong odor of this perfume about his

body and breath which cannot be mistaken. Such cases usually use this perfume externally in excess to divert suspicion from its internal use. Obscure and complex nervous disorders in a woman that uses cologne externally should always suggest the possibility of its internal use. Inebriates who use it externally and recover rapidly, or make sudden changes of habits and living, may be suspected of substituting it for other spirits. Cologne, both German and American brands, contain a large and variable per cent. of alcohol, and are always dangerous for use among neurotics, even externally. Its internal use is very likely to follow if the person has a great liking for this perfume. In hospitals for the treatment of alcohol and opium cases, cologne is found to be as dangerous as alcohol and is not allowed. In private practice among neurotics the possibility of this danger should always be considered.

THE TEN HEALTH COMMANDMENTS.

—1. Thou shalt have no other food than at meal time.

2. Thou shalt not make unto thee any pies or put into pastry the likeness of anything that is in the heavens above or in the waters under the earth. Thou shalt not fall to eating it or trying to digest it. For the dyspepsia will be visited upon the children to the third and fourth generations of them that eat pie; and long life and vigor upon those that live prudently and keep the laws of health.

3. Remember thy bread to bake it well; for he will not be kept sound that eateth his bread as dough.

4. Thou shalt not indulge sorrow or borrow anxiety in vain.

5. Six days shalt thou wash and

keep thyself clean, and the seventh thou shalt take a great bath, thou, and thy son, and thy daughter, and thy man-servant, and thy maid-servant, and the stranger that is within thy gates. For in six days man sweats and gathers filth and bacteria enough for disease; wherefore the Lord has blessed the bath-tub and hollowed it.

6. Remember thy sitting-room and bed-chamber to keep them ventilated, that thy day may be long in the land which the Lord thy God giveth thee.

7. Thou shalt not eat hot biscuit.

8. Thou shalt not eat thy meat fried.

9. Thou shalt not swallow thy food unchewed, or highly spiced, or just before hard work, or just after it.

10. Thou shalt not keep late hours in thy neighbor's house, nor with thy neighbor's wife, nor his man-servant, nor his maid-servant, nor his cards, nor his glass, nor with anything that is thy neighbor's.—*New England Farmer*.

“HAMMERMUSIK.”—Prof. Wätzoldt, the director of the Elisabethschule (a girls' school in Germany), has addressed a most serious warning to parents and guardians on one of the evils of the present system of teaching girls. It is on the subject of what Wagner has contemptuously called *Hammermusik*. The Professor begins by pointing out that the terms, “musician” and “pianoforte-player” are not at all convertible. Then he refers to the illogical conduct of so many parents, who, for the sake of their children's health, ask them to be excused certain subjects of the school course, while they encourage them in the most excessive exertions at the

pianoforte. Now, there is no subject, which, if taught seriously, makes such a demand upon the store of nervous energy of the body as instrumental music. The brain, the eye, and the hands are all exercised at once; hence the frequent injury to health in the case of girls who have not a strong constitution. The professor has collected some statistics which show that more than half the pupils are taught the pianoforte, and that after their tenth year they spend twice as much time daily at it as at their other home lessons. Many girls complain of feeling tired, absent-minded, fidgety, of headaches and sleeplessness; and these complaints grow worse as they grow older. In all cases where the parents could be prevailed upon to diminish the hours of pianoforte practice, or stop it altogether, a marked improvement in general health was the invariable result. Herr Wätzoldt, therefore, recommends (1) that pianoforte instruction, should not begin until the age of twelve, (2) that only girls of sound health, and who show some talent for music, should be made to play.—*Science*.

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HYGIENE.—It is the province of hygiene to seek out and determine the causes of disease, and to formulate rules for their prevention and removal. It may thus be called also preventive medicine. The progress of hygiene, such as it was, rested for many ages upon an empirical basis; and indeed, to a large extent, this is still the case. The subject has, however, in later times at least, been studied to considerable advantage, though much remains to be done.

Two centuries ago the mortality of London was 80 per 1,000; at the

present day it is under 23. A century ago ships could barely keep the sea for scurvy, while jails and hospitals were in many cases the hotbeds of fatal diseases. Now, these conditions are rectified, or at least the means of rectifying them are known. Thirty years ago the English troops at home died at the rate of 20 per 1,000, now their death-rate is less than one-half of this. A knowledge of the causes and modes of propagation of disease being necessary in order to provide rules for its prevention, it is obvious that hygiene must be largely dependent upon the advances made in pathology and etiology; hence the impossibility of any clearly marked progress in former times, by reason of the imperfection of the collateral sciences, and the want of the appliances more recently made available for inquiries of such difficult and recondite character.

Within this century, however, and especially within the last forty or fifty years, it has been possible to follow out the subject on a more strictly scientific basis, and so to lay a foundation at last on which to build a structure which may one day entitle hygiene to a place among the more exact sciences.—*Plumber's and Gasfitters' Review*.

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FAITH WITHOUT WORKS.—We have the authority of Divine Writ for saying "Faith without works is dead," and it is only by the above title that we can characterize the methods for cure adopted by Christian Scientists, Divine Healers, Metaphysicians and their ilk.

To ask that thirst may be quenched and not the use of water at hand, to

pray that the gnawings of hunger may be assuaged and not eat the food furnished or obtainable, would be exceedingly irrational acts, for faith alone would not place water to the lips nor food to the mouth; and few there are, even of the most fanatical "believers," who would trust to faith in these cases. Then why should any believer pray that his or her disease may be cured, and do nothing further than exercise faith for the accomplishment of the same? Is it not indeed, almost beyond comprehension that reasonable beings should do such a thing? The laws of nature are the laws of God. It is one of the laws of nature that every result must have sufficient cause, whether in the realms of mind or matter. Thus every departure from health, the normal and natural condition of the body, must have its cause; so too must the return to health be affected by some efficient means. Now if the physical diseases are caused by mental conditions, such as fright, fear, etc., so may other mental phenomena, as hope, faith and the like, be most instrumental in effecting cures; but, if on the other hand, material causes lie back of the disease, *e. g.*, poisons taken into the body, then no amount of mental conditions can be efficient; no, indeed! in order to work out a recovery it is necessary to use material things, *i. e.*, antidotes, stimulants, etc. Faith and hope are conditions of mind of no small therapeutic value, and have long been recognized and used by the medical profession. But to make them the all-in-all, to the exclusion of the methods of nature and science, converts faith into fanaticism and divorces it from works, thereby killing instead of curing,—*Southern California Practitioner.*

MICROBIC LONGEVITY: SCARLET FEVER.—Thirty-five years ago an opulent family lived in a palatial home in one of our most beautiful suburbs. Two lovely children graced the happy household. But scarlet-fever, that fell foe of childhood, closed their eyes in death. The grief-stricken mother gathered up little slippers, slippers, and toys with two golden tresses, and reverently laid them away in a trunk as sad but priceless mementoes of her lost darlings.

War came with its tragic vicissitudes, and death time and again threw its shadow over the hearthstone.

Finally the place passed into stranger hands. Last year two families took it as a summer residence.

The children, six in number, with childish curiosity, began to explore the secret recesses of the grand old house. In a closet was found the forgotten trunk. A touch dissolved the time-corroded clasp, and one by one the sacred relics were removed, until a faded newspaper was found, which told the pathetic story. Half-spelling out the meaning, they took it to their mother, who chided their curiosity, and tenderly replaced the treasures.

Five days after this occurrence two of the children were seized with scarlet fever, and forty-eight hours later the other four were attacked.

Two cases were grave, the others mild. All recovered. Was the disease contracted from the trunk? I think so, because there was no other ascertainable source of infection.

Moral: Silks, woollen, and hair, being good fomites, should not be put away in air-tight trunks as mementoes of friends dying with infectious diseases, because they may become, at some remote period, the starting point of a

wide-spreading and a disastrous epidemic, a calamity which was averted in this instance only by complete isolation.—*Professor T. A. Atchonis, M. D., Nashville Journal of Medicine and Surgery.*

STATISTICS OF BREATHING.—In each respiration an adult inhales one pint of air.

A man respire sixteen to twenty times a minute, or twenty thousand times a day; a child, twenty-five to thirty-five times a minute.

While standing, the adult respiration is twenty-two; while lying, thirteen.

The superficial surface of the lungs, *i. e.*, of their alveolar space, is two hundred square yards.

The amount of air inspired in twenty-four hours is ten thousand litres (about ten thousand quarts.)

The amount of oxygen absorbed in twenty-four hours is five hundred litres (744 grammes); and the amount of carbonic-acid gas expired in the same time, four hundred litres (911.5 grammes.)

Two-thirds of the oxygen absorbed in twenty-four hours is absorbed during the night hours from 6 P. M. to 6 A. M.

Three-fifths of the total carbonic acid is thrown off in the day time.

The pulmonary surface gives off one hundred and fifty grammes of water daily in the state of vapor.

An adult must have at least three hundred and sixty litres of air an hour.

The heart sends through the lungs eight hundred litres of blood hourly, and twenty thousand litres, or five thousand gallons, daily. The duration of inspiration is five-twelfths, of

expiration seven-twelfths, of the whole respiratory act; but during sleep inspiration occupies ten-twelfths of the respiratory period.—*Exc.*

MILWAUKEE'S GARBAGE CONSUMER.

—Sanitarious and health officers have endeavored from time to time to solve the problem of how to dispose of the accumulation of garbage in the large cities. Milwaukee has adopted a consumer known as the Merz process, and which is described by a contemporary as follows: About thirty-five tons of garbage—"good, clean garbage," free from ashes—is delivered at the works every day at this time of year. The wagons drive up an incline and unload upon the second floor, where it is immediately thrown into the dryers. The dryers are tanks about fourteen feet long and five feet in diameter, having a double cylinder—a small one inside of a larger. Between the shells, or the cylinders, is a steam space of two inches, which has a boiler pressure of eighty-five pounds on constantly. The cylinders have cast-iron heads, and a large hollow shaft running through the centre of the inner cylinder. This is also filled with steam, and revolves by means of gear wheels, keeping the contents in circulation until thoroughly dried.

The moisture is drawn off by means of a large exhaust fan through a twelve-inch pipe and forced into a spray condenser. When the material is thoroughly dried it is discharged from the dryer into a conveyer, which deposits it into square tanks called extractors. After being sealed and made air-tight benzene is introduced into the extractors and the grease is dissolved with a solution of hot benzene. After the grease has been dissolved and

washed out, the material is sold for fertilizer.

VITAL STATISTICS.—Dr. Newsholme of London, in a recent volume on vital statistics, the results of careful investigations of census returns and public registers, shows that there is a steady decline not only in Great Britain but throughout Europe in the proportion of births to population, amounting to almost three per thousand in seven years. The marriage rate is also on the decline, while the age at marriage shows a tendency to increase. The average number of births to a marriage is for England and Wales about four and a half; for Italy five, and for France about three and a half.

With regard to the death rate, the figures show that mortality is usually highest in the first quarter of the year and lowest in the third. Both mild winters and cool summers are said to lower the proportion of deaths; the former among the old and the latter among the young. Married persons of both sexes have a better chance of of life than the single or widowed, but it should be remembered that marriage is more or less a natural selection, in which the weak and sickly are not likely to be regarded with favor. The death rate is higher in towns than in the country, but this difference is less marked now than formerly. The attention paid of late years to sanitary science has been accompanied by a striking decrease in the death rate, an improvement great enough to give 1,800,407 additional years of life to the 858,878 children annually born in England and Wales, thus extending the lifetime of the 437,492 males by a year and a half

each, and of the 421,386 females by at least two years and three quarters. As the various tables also show that much the largest decrease in the death rate has been among those under twenty-five years of age, it is apparent that women and children have been most benefitted by the application of modern sanitary ideas, possibly because they are both removed from the intense and constantly increasing severity of competition, which is undoubtedly unfavorable to the longevity of men.—*N. Y. Med. Times.*

NATIVE AMERICANS AND IMMUNITY FROM CONSUMPTION.—In an interesting article on the subject of consumption (*Medical Age*, June 25th), Dr. E. P. Hurd presents some facts which show, as he thinks, a slowly acquired immunity among native Americans against this disease. Dr. Hurd has compiled the statistics of mortality in the city of Newburyport for the past thirty years with the following result:

Population of American Parentage.

1858,	one death from consumption in	378
1865	" " " "	564
1870	" " " "	252
1875	" " " "	300
1880	" " " "	351

Population of Foreign Parentage.

1858,	one death from consumption in	273
1865	" " " "	150
1870	" " " "	161
1875	" " " "	176
1880	" " " "	136

The yearly average among persons of American parentage is one death from consumption in 336. The yearly average among persons of foreign parentage is one death from consumption in 179.

"The lesson taught by these tables," says Dr. Hurd, "is that consumption

is far more prevalent among foreigners than among natives; as far as the latter are concerned, there is a gradual decrease in the death-rate from this disease."

Dr. Snow, of Providence, R. I., has also computed statistics which show the same thing. For example:

Population of American Parentage.

1875, one death from consumption in 415
1880 " " " " " 435

Population of Foreign Parentage.

1875, one death from consumption in 283
1880 " " " " " 263

Dr. Hurd's theory that the native American race is securing some immunity against consumption, while the bacillus attacks especially the immigrants who are being sloughed upon our shores, has a certain amount of attractiveness—for the natives. He does not, however, take fully into account the fact that the foreign population are, as a rule, not so well housed or fed, and that they in general live under much worse hygienic conditions. If the mortality-rate from consumption is increasing among them, it is largely because of the well-known fact that we are getting a much lower grade of immigrant than we used to receive.—*Med Record.*

BEEF-TEA FALLACY.—There is no article of diet for the sick which has been more over-rated than the one designated as above. At least ninety-five out of every hundred of the public, including medical men, believe that beef-tea contains all the nourishment of the beef from which it is made; or at any rate they order it and trust to it as though it did. In many long and wasting diseases in which the battle between life and death depends upon nourishment of the patient we fre-

quently find both patients and attendants depending almost entirely on the watery part of the beef, or on the water in which it has been soaked or boiled. Let any of our readers who wish to ascertain how widespread this belief is ask a hundred or so of their patients, "What do you do with the beef from which beef-tea has been made?" and they will with few exceptions and generally with surprise reply, "Why, throw it out of course!"

The writer well remembers the surprise with which the ladies of the Diet dispensary in this city received his recommendation to make this beef into meat cakes with the addition of potatoes, onions, pepper and salt. The suggestion was accepted, and thus from twenty to fifty pounds of beef-steak was saved from destruction daily, and a great many hungry families were thereby satisfied. The number of pounds of good meat annually wasted all over the world must number many hundreds of thousands. No one ever thinks of feeding a patient on the water in which eggs have been poached. Yet the difference, in the opinion of those who have studied the subject, is not so very great. In beef-tea you have none of the albumen, none of the fat, and only a little gelatin with a solution of salts. In fact, dogs fed on the strongest beef-tea only die after about the same period of time as those fed on water alone. These last experiments were made so long ago that we forget where they were reported. All that can be said in its favor is that it is a pleasant stimulant, and consequently finds its proper place in acute and depressing cases in which the patient can be trusted to live on his own tissues for a short time. In many cases patients soon tire of it, and can hardly

be induced to swallow it, while in others it causes severe diarrhœa. It is possible, too, that owing to the gelatin which has been chosen by bacteriologists as the best material with which to make culture fluids, it may favor the progress of such diseases as are characterized by the growth of microbes in the digestive tract. As we stated in a former article on typhoid fever, the temperature seems to range one degree higher when the patients are fed on beef-tea.

Perhaps in most cases it would be better to throw away the beef-tea and give the patient the beef, properly masticated or artificially digested.—*Canada Medical Record.*

THE DEATH-RATE AND INTOXICATING LIQUORS.—Considerable discussion has taken place the past year in regard to a document published by the the British Medical Association relating to the alcoholic habits and death-rate of different occupations and classes. The liquor press has taken up portions of it, and made an effort to show that the death-rate of drinkers was not greater than abstainers. They omit to notice the following, which will be found among the deductions of the Committee of the Association :

"On the whole, then, in addition to the information which we obtained from these returns as to the alcoholic habits of the inhabitants of this country, and as to the relative alcoholic habits of different occupations and classes, we may not unfairly claim to have placed upon a basis of fact the following conclusions :

"1. That habitual indulgence in alcoholic liquors beyond the most moderate amount has a distinct tendency to shorten life, the average shortening being roughly proportioned to the degree of indulgence.

"2. That of men who have passed the age of twenty-five, the strictly temperate, on the average, live at least ten years longer than

those who become decidedly intemperate. We have not, in these returns, the means of coming to any conclusion as to the relative duration of life of total abstainers and habitually temperate drinkers of alcoholic liquors."

Life insurance statistics, as summed up by the *National Temperance Advocate*, show the great benefit of total abstinence.

The returns of the United Kingdom Temperance and General Provident Institution of London prove conclusively the remarkably greater length of life among abstainers than among drinkers who are not drunkards. The statistics are spread over twenty-two years, and afford the best proof attainable of the marked longevity of abstainers, as compared with drinkers. Drunkards being excluded altogether, the averages for the whole period in the Temperance Section were: Expected deaths, 3937; actual deaths, 2798. In the General Section: Expected deaths, 6144; actual deaths, 5984. By which it is observable that, in the General Section, including moderate drinkers, in the twenty-two years, there were only 160 less "actual" than "expected" deaths; in the Temperance Section, exclusively of total abstainers, there were 1139 less "actual" than "expected" deaths in little more than half the number of policies.

These figures represent facts of great significance for the consideration of the individual citizen as to his personal well being, and for the statesman and legislator charged with the duty of legislating for the promotion of the general public welfare.

The experience of the Rechabites of Great Britain, as compared with the Odd Fellows and Foresters, is 1 death in 44 yearly for drinkers, and 1 in 140 for Rechabites.—*The Sanitarian.*

THE STREET CAR AND PUBLIC HEALTH.—No question is of greater importance to the public health of great cities than the proper construction and interior arrangement of street cars, for they have come to take the place in our modern civilization largely of all other modes of conveyance in our great metropolitan centers of population, because of cheapness and adaptation to the wants of the traveling public, and yet with all their excellencies there are many defects in arrangement and management very detrimental to the health of the patrons.

Not sufficient caution is taken by the officials to prevent persons from traveling who have infectious diseases, and very often persons with small-pox, measles or other contagious diseases, are found mingling with others in a crowded car, thus endangering the public health.

We know several instances of this kind, in this city, of persons on the car giving every evidence of disease which could be conveyed by such contact as could not be prevented in a crowded street car.

If a person boards a car bearing the first evidence of contagious disease, it should be the first duty of the conductor to find out the truth in the matter at once. A notice posted in the car warning such persons against riding would be in place.

The company should make and enforce strict rules in a matter so closely related to the public welfare.

Too great caution cannot be exercised on the part of street-car officials;

Another menace to the public health is the crowded condition of the cars.

Too few cars are run to accommodate the public, and often age and youth, strong men and invalids, are

packed in a small, tight car, for a long time.

Many, unable to stand, are obliged to do so, and health, and sometimes life, are both endangered, and the management, after having once secured their franchise, seem quite indifferent to the complaints of the people.

If a company is able to build, equip and run a paying street-car line, they ought to be compelled by the municipality to put on cars enough to comfortably seat the traveling public, or exact no fare from those obliged to stand. Men who have stood all day at their work, ought not to peril health by being obliged to stand all the way to their homes.

It amounts almost to an insult to the public to exact fare when no seat is provided by the company. Again, too little care is exercised on the part of conductors in looking after the comforts of the patrons. Often in cold weather sickly persons are exposed to unnecessary drafts of air, and lay the foundation of incurable disease. — *Northwestern Medical Journal.*

WATER-SUPPLY OF PARIS.—The Paris correspondent of the *Lancet*, writing in the issue for June 22d, says :

A great danger to visitors to Paris is due to the insufficiency of the water-supply. Paris is in a most unfortunate position. It cannot be said that the water-supply is bad. On the contrary, at immense cost, Paris has secured one of the best water-supplies enjoyed in any town of Europe. According to the last report, Paris was receiving 121,000 cubic metres of the Vannes water, 21,000 cubic metres derived from the Dhuis, and 5,000 cubic metres from the St. Maur springs—in all, 147,000 cubic metres

of pure and excellent spring water. This, however, is not enough. The daily consumption is estimated at 158,000 cubic metres. The deficiency is not very great ; still it is enough to compromise the whole town ; for when the store of good water is exhausted the Seine water is provided, and this through the same channels and without warning. Thus, though a person may, as a rule, drink wholesome water, he will receive for a week or so during the course of the year water taken from the Seine, which is very likely to be contaminated. Again, a person may drink a glass of water in one quarter of Paris which is perfectly pure, while in another district he may, on the same day, get water that is certainly not free from the occasional presence of injurious organic matter. At the present moment, the supply of spring water having reached a low ebb, the Seine water is turned on in four arrondissements. For twenty days these unfortunate districts are to receive only the Seine water ; then three other arrondissements are to be served in the same way.

In the pavilion of the Prefecture of the Seine, situated in the central court or garden of the Exhibition, will be seen three glass tanks of water side by side. One receives the water of the Ourcq canal, another of the Seine, and the third of the Vannes. The first two are more or less opaque, are of a green-yellowish tint, and vary more or less in aspect from day to day. But that which contains the water of the Vannes is always perfectly transparent and never changes. Members of the Municipal Council have urged, so far in vain, that the water-supply should be increased. There are numerous projects, and recently a

resolution was passed by the Council calling upon the Legislative Chambers to discuss at once the scheme for bringing the waters of the Avre to Paris.

That the Seine water may be dangerous will be obvious to all who are acquainted with the neighborhood of Paris. The intake for the supply is of course outside the town, and some little distance up the stream, but it is unpleasantly near the large manufactories of *poudrette*, or human guano. Also there are boats containing tanks which are filled with the contents of cesspools, and the manure is thus conveyed up the river to the works. A few years ago some scavengers, in their impatience to finish their day's toil, instead of conveying all the soil the barges contained to the works, simply threw a considerable portion over into the river. Fortunately this was discovered, and now there is a service of inspection organized both day and night, and careful watch is kept that these tank barges should not again contaminate the water. But there are other causes of pollution, and it is an undeniable fact that many outbreaks of typhoid fever in Paris have occurred about a fortnight after the substitution of Seine water for the usual and pure supply of water from the Vannes or the Dhuis. The question of water-supply is a very serious problem which the French authorities should lose no time in settling.—*Med. and Surg. Reporter.*

MARRIAGE AND BIRTH STATISTICS IN ENGLAND.—It is said, in the *Pall Mall Gazette*, that each year 15 people out of every 1,000 marry. Of each 1,000 men who marry 861 are bachelors and 139 are widowers, while of each 1,000

women only 98 have been married before, and 902 are spinsters. Twelve marriages out of every 100 are second marriages. The average age at which men marry is about 27, while the average age at which women marry is about 25 years. Out of every 1,000 persons 602 are unmarried, and 53 widowed. Over one-half of all the women between 15 and 55 are unmarried. In all countries about 5 per cent. of marriages prove barren.—Among the English nobility 19 per cent. are childless. Married women live two years longer than single ones, although 1 in 70 dies in childbirth. If the mother dies first, the father survives $9\frac{1}{2}$ years; but if the father dies first, the survival of the mother is $11\frac{1}{2}$ years, as an average. Two thousand four hundred and forty-one births occur in England daily, about 33 for each 1,000 inhabitants. February is the month in which the greatest number of births occur, June the month in which occur the fewest. The average number of births for each marriage is 4.33. In every 1,000 births 11 are twins.

TO PUNISH DRUNKARDS.—The Legislature of Minnesota at its last session, passed a law to punish drunkards. The new law provides a fine of not less than \$10, nor more than \$30, or by imprisonment for not less than ten nor more than forty days. For the second offense, by imprisonment for not less than thirty, nor more than sixty days, or by a fine of not less than \$20, nor more than \$50. For the third or all subsequent offenses, by imprisonment for not less than sixty days nor more than ninety days.

It is to be hoped that this law will be vigorously enforced. *The Sanita-*

rian has constantly maintained that the true criminal is he who gets drunk; and that it is no more reasonable to hold the liquor seller guilty of promoting drunkenness than it would be to hold the grocer guilty of promoting theft because his goods are sometimes stolen. Make drunkards odious and cease pampering them as unfortunates and encouraging them to hold other persons responsible for their sins, and drunkenness will speedily go out of fashion.—*The Sanitarian*.

LEPROSY.—Dr. Samuel G. Dixon, Professor of Hygiene in the University of Pennsylvania, thus writes from London to the September issue of *The University Medical Magazine*.

"At a recent meeting of the Epidemiological Society of this city, I was afforded an opportunity to examine two cases of leprosy. Upon personal inquiry I learned that one of the patients suffering from this disease was actively engaged in a London meat market. This person, Edward Toxall, is sixty-four years of age, and makes a living by buying and vending meats, all of which he handles in person.

The physician who exhibited this case at the meeting stated that it had been under his care for nearly two years. From what I could learn, I feel satisfied that no report of the case had ever been made to any Sanitary Board of London, up to the evening on which I saw it.

Never having made any inoculation experiments with leprosy bacilli, I cannot speak from personal experience, yet the evidence seems conclusive that leprosy can be communicated from an infected animal to one in health by the injection of the leprosy bacilli,

and what they carry with them into the blood of the healthy animal.

At the same meeting of the above society, sputum of this leper was exhibited on the stage of the microscope, showing many bacilli with the morphological characters of leprosy bacilli. Moreover, while talking with these lepers, I noticed that they expectorated frequently during the course of the conversation.

From the facts already related, we can readily understand that it is quite possible for a person with a laceration of the gum or mucous membrane of the mouth, a condition often existing for some time after a visit to the dentist, an accidental injury from a toothbrush, etc., to receive the leprosy poison into such a wound while eating raw or underdone meat which has been handled, or, perchance, expectorated upon by the leper in question, or others like him. And inasmuch as tuberculosis and anthrax may thus be communicated through wounds of the oral cavity, not only should all such cases as the above be carefully isolated and guarded by the proper authorities, but the public, and especially the medical profession, should insist on a thorough and reliable inspection of all meats sold, and also of the dealers, butchers, and all others who handle the same."

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LEAD POISONING.—The *Sanitary News* draws attention to the fact that silk thread is soaked in acetate of lead to increase its weight, and persons who pass it through the mouth in threading needles, and then biting it off with the teeth, have suffered from lead poisoning.

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Supreme Court Room, State Capitol,
Harrisburg, unless otherwise ordered.

TIME OF MEETING,

Second Wednesday in May, July and Nov.

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BENJAMIN LEE, M. D.

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COMMUNICATIONS.

THE SELECTION AND TREATMENT OF PUBLIC WATER SUPPLIES.*

BY HENRY LEFFMAN, M.D.

In most parts of the earth the inhabitants of sparsely settled districts find no difficulty in securing an abundant supply of wholesome water. Natural springs and surface waters undisturbed by human action, conform in almost all cases to the highest sanitary standards, and the sub-soil water is also generally satisfactory. The selection and treatment of water for drinking purposes becomes a problem of the highest practical importance, and of much scientific difficulty when a populated district is under consideration. Not only does the absolute pollution of all water sources largely increase, but the natural regenerative or purifying processes are hampered and interrupted.

Medical authorities are now generally agreed that a favorable influence of the system both in health and disease is produced by the free use of water, and it is not unlikely from clinical experience and physiological inference that all other forms of liquids,

especially stimulants of various kinds are less beneficial than pure water. The suspicion that water may be the vehicle by which injurious materials may enter the body has been amply confirmed by the recorded instances, and it has therefore become one of the most practical and urgent of scientific problems to determine by analysis the suitability of water for drinking purposes. The solving of this problem has, however, been delayed by the fact that even up to the present moment no positive information is at hand as to the exact manner in which disease may be conveyed by water, that is, as to the particular chemical or mechanical conditions which determine the action. It will not be necessary to review here the various theories which have been proposed, or the methods which have been based on them. It will suffice to indicate broadly the general tendency.

As soon as we begin to examine the chemistry of natural waters, we find there are several frequently occurring ingredients which have but little sanitary significance, except when present in excessive amounts, and then the taste or other properties of the water render it practically non-potable. Such ingredients are compounds of magnesium, iron and sulphur, or bodies that make the water distinctly alkaline or acid. Waters of this type possess often special physiological properties,

*Read before The State Sanitary Convention at Pittsburgh.

which render them suitable for therapeutic uses, but these need not concern us here. Other ingredients when present in even very minute amounts exercise a deleterious action, generally of insidious character. Among this class may be mentioned lead and arsenic compounds. A third class are those which confer no striking property on the water and are of little moment when present in minute amount, but when in considerable quantity become injurious. Vegetable organic matter may be cited as an example of this class. In recent years, a fourth class of ingredients has been brought into notice, and has indeed become one of the most important points for consideration, including those bodies which are residues or final results of action of natural or artificial conditions to which the water is subjected, and which while of but minor influence in themselves furnish a clue to the history of the water.

A proper appreciation of this topic will necessitate some knowledge of the different classes of natural waters. We may conveniently distinguish four types.

Rain Water.—Under which is included all water deposited from the atmosphere, hence, rain, hail, snow, dew or frost.

Surface water.—All collections of water in free contact with the air, lakes and seas.

Subsoil Water.—Water at moderate depth below the surface not in free contact with the atmosphere and derived in large part from the rain or surface water of the district.

Deep Water.—Water accumulated at considerable depth below the surface, and from which the subsoil water

of the district is excluded by difficulty permeable strata.

It is obvious that the standards of purity for these different classes will be different. From a theoretical point of view, rain water should be the purest form of all, but practically this is by no means always the case. When collected in uninhabited places, and after much rain has fallen it contains but little foreign matter, but it is never perfectly pure, and when collected in cities it is always quite impure. Few persons have any idea of the amount of water that falls during a rain. An inch of rainfall is equivalent to 100 tons of water on each acre. No doubt when districts become much more densely populated and engineering operations are conducted upon even a larger scale than at present, means will be devised for collecting and storing much of the rainfall, in such a manner as to secure a safe and abundant supply, but at the present time the collection of it has very little to recommend it to the sanitarian. Water, for instance drained from roofs, and collected in cisterns is of uncertain quality, and as will be seen further on may be decidedly unsafe.

In establishing standards of purity for water supply, we must keep constantly in view the type to which the water belongs. A rain water containing three grains of solid matter to the gallon would be impure, while a similar portion in a well water would be a favorable sign. Similarly, certain nitrogen derivatives, ammonia and nitrates might be present in considerable amounts in the well water without invoking suspicion, while in a river or other surface water they would be highly suspicious. Unfortunately the data for deciding upon such points,

are still but imperfectly known, Processes of analysis have undergone so much improvement in the last few years that it is not possible to compare analytical results obtained years ago with those now obtained.

A brief history of the course of a given mass of water will serve to show the varying significance that may be attached to the same ingredients according to the circumstances under which the water is collected. Rain, in falling through the atmosphere will absorb the different gases particularly any ammonia or carbon dioxide, both of which are almost always present, and will also carry down mechanically numerous particles living and dead. Falling on the surface of the ground it will partly run off and partly sink into any porous rock or soil. That which runs off will take up more or less material and gradually gather into streams and rivers, constituting surface water. The exposure to light and air which such water undergoes facilitates chemical changes of an oxidizing character, and the organic matter is gradually destroyed. Surface water is often turbid, but as rivers approach the sea, much of this trability is deposited. The water which sinks into the soil takes up various substances, and changes also begin in the organic matters. Recent researches have established the fact that these changes are absolutely dependent on micro-organisms. The action consists essentially in the breaking down of the complex organic products, the remains of the tissues of animals and plants, and finally the formation of ammonium compounds; these latter are then by the action of special microbes converted into oxidized forms, known as nitrates and nitrites, being compounds

referable to nitric and nitrous acids respectively. Nitrates are the final step in these changes and their presence in water to the exclusion of any other form of combined nitrogen would be evidence of the completion of the destructive and purifying action of the soil. It is rare however to find such complete oxidation, and generally three and sometimes four classes of nitrogenous compounds are found in these subsoil waters. These are unchanged organic matter, ammonium compounds, nitrates and nitrites. Except in places near the sea, or in the vicinity of salt deposits, the subsoil does not contain large amounts of soluble chlorides, and it is found that typical subsoil waters contain but small amounts of chlorine. When, however, animal excretion or refuse gets into soil, chlorides are always present, and hence the determination of the amount of chlorine in subsoil water has long been an important analytical point. For the same reason the proportion of chlorine in rain or subsoil water should be low. When, however, water passes to considerable depths, its solvent powers become much increased by the increased pressure and temperature, and it encounters strata containing mineral substances different from those in the subsoil. Such water may find its way to the surface through natural or artificial borings. Of the former, the mineral springs, thousands of instances are known, scattered over all parts of the world and exhibiting great variety of composition. The artificial sources constitute the artesian waters, and these also are very variable in character. Their depth is much less than that of most of the true mineral springs. The constancy of composi-

tion of these deep springs is remarkable. The Bedford magnesia spring was examined in 1878, by Dr. Genth, and again examined by myself in 1888, and was found to have undergone but little change in its complex composition, although a vast amount of water has flowed out of it in the interval. A large proportion of mineral solids with comparatively little organic contamination is the general feature of deep waters. Unfortunately the mineral solids are often so decided in their physiological action as to render the water unsuitable for general drinking purposes, but when such is not the case this class of waters constitutes an excellent source. From a geological point of view these sources are also interesting, some of them representing the ocean waters of past ages.

A deep water it must be noted is not merely a water taken from a considerable distance below the surface. The term is only properly applied to those underground currents or collections which are separated from the surface and subsoil waters of the district by substantially impervious strata. The uncertainty of the character of artesian waters will constitute a serious difficulty in employing them as regular methods of securing public supplies. In Philadelphia for instance, where the high water rates have led to considerable resort to this method, great differences in quality are noted even within limited areas. Thus, of two deep wells located in the centre of Philadelphia, but a few hundred yards apart, one contained considerable iron and no manganese, the other considerable manganese but no iron.

Within the last few years much attention has been paid to the examination of the organic life in water, and

much interesting and practically valuable knowledge has been gained. The microscopic examination of ordinary water sediments has long been a favorite field, but the results have been of but little sanitary value. It is true that the presence of the higher forms of animal and vegetable life is generally noted in rather good waters, but the inferences will be uncertain. The class of investigations which are more satisfactory are those in which minute microscopic organisms grouped under the general title "microbes" are determined. Great benefit has been derived in these observations by exploring the ingenious culture methods. The examination of a sample directly by means of the microscope would be an extremely difficult task, and is rarely resorted to. The usual plan is to mix a known volume of the water with a sterilized nutritive fluid and spread the mixture over a glass plate which is then placed under conditions favorable to the growth of any microbes that may be present. Each organism then becomes the centre of colony of its own kind, and the determination of the number of colonies and of their specific character becomes easy.

A very large number of most careful and painstaking experiments have been made in this manner. The method is primarily due to Dr. Koch, and many of his pupils as well as those of the other laboratories have contributed results by it. Dr. Percy Frankland of England, has done much work of this kind. It does not appear that from the results of the method an absolute judgement of the sanitary value of a water can be made. The micro-organisms are subject to great variation in number without corresponding variation in the sanitary

significance. Transportation and storage have considerable influence, and tests are of little value unless made very soon after the collection of samples, a point that will be rarely practicable. Although the expectations of analytical results have not been realized. Much information of value in sanitary engineering has been obtained. The effects of storage, transportation, and especially of filtration of water have been clearly indicated. Applied to these problems the method seems free from serious fallacy. By it we have learned that the storage of water in reservoirs has a beneficial effect on its wholesomeness, that even disease producing microbes may be ultimately exterminated, largely through the process of natural selection; being overcome by the microbes normal to the water, and therefore better fitted for the struggle. This result is however not always obtained, some of the more virulent microbes having high resisting power.

The general chemical and biological principles which have thus been hastily sketched may be applied to the problem of judging of the suitability of any given supply. So far as the proportion of dissolved solids is concerned we cannot assign any close limits. Statements are made by some authorities that pure water is unsuitable for continued use, but there does appear to be any sound theoretical reason for this view, nor is it confirmed by experience; similarly, the upper limit of solid matter is uncertain. Sea water is non-potable, and sanitary authorities have assigned an arbitrary limit of 40 grains to the gallon, but there are waters in constant use which exceed this figure. The artesian well at Black's Island, Delaware Co., Pa.,

contains about 80 grains to the gallon, is of pleasant taste and has been used for a long while without apparent injury by a considerable number of persons. The attempt to judge of the wholesomeness of water by its general properties such as color, taste and smell cannot be considered satisfactory. It is true that an absolutely pure sample will be clear, colorless, odorless, and almost tasteless, but many good waters are known in which there is distinct color, and on the other hand samples of the most dangerous description may not show any of this to the senses. In populated districts, the subsoil waters as obtained in wells are often clear, cool and very refreshing, but plenty of evidence is at hand to show the danger of such supplies.

It has been noted above that observation as to the changes in water in its various experiences, modify considerably its standard of purity. Chemical examination at the present day is concerned largely with determining how far the condition of a sample indicates a previous association with polluting materials. Among the important points in this regard are the various states in which the nitrogen is found, and the amount of each of the four classes of compounds in which it occurs. It is particularly the nitrites representing an intermediate state of oxidation due either to insufficiency of purifying influences, or to recent contamination with fresh pollution that are regarded as most objectionable, in fact if chemists were to be limited to one test for water, the extremely delicate reaction for nitrites which we now have would probably be preferred. By this, one part of a nitrite can be detected in 1,000,000,000 parts of water which is one grain in 17,000 gallons.

Chlorine also as being generally associated with sewage is a suspicious ingredient. It is quite important to note that these substances are not injurious in themselves, but are merely indexes of previous contamination.

All considerations go to show that one of the most important points in judging of the safety of a water supply is information as to the probable origin of the water, of the opportunities for contamination to which the supply is liable. In most cases indeed the selection of the supply will be an engineering problem to which however chemistry may lend much aid. This fact is often neglected, and it is often difficult to obtain the proper data as to source and surroundings from which samples were taken.

While it is true that not much is known as to value of the mineral ingredients found in water, there is one relation in which they become of moment. Water is very frequently distributed in lead pipes, and is liable to take up some of this metal and become highly poisonous. Recent observations made have indicated that lead is probably one of the most insidious foes to health to which civilized communities are exposed. As the methods of distinguishing lead poisoning become more and more clearly known, the detected cases become more numerous, and it would seem that it forms a notable item in the mortality lists. There can be no more insidious method of its introduction into the system than through drinking water, and even minute amounts are sufficient to ultimately cause trouble. For this reason chemists have paid much attention to the conditions under which water takes up lead, but unfortunately the matter cannot yet be considered as settled.

For many years it was taught that the sulphates were the protecting influence, that they precipitated the lead in an insoluble form. This view has, however, been exploded, and more recently the view has been accepted that the silicates are most efficient. Free acid, chlorides in considerable amount, and sulphates are now considered as promoting this corrosion, while carbonates, phosphates, and silicates are considered as diminishing it. It appears that waters otherwise unobjectionable, especially those containing but small amounts of solid matter may be the source of serious injury by reason of their action on lead. This is a point rarely noted in sanitary reports.

The danger of action on lead finds an application in the judging of the use of rain water. This is, as is well known, quite soft, that it contains but little mineral matter. It is also thoroughly aerated and may contain nitrates and sulphates, both of which promote corrosion. Hence the ease with which, if lead-lined tanks should be used for storage or lead pipes for distribution, the poisonous metal could be taken up.

Water of typical purity corresponding to the narrow standards laid down cannot always be obtained, and already existing sources of supply may by the movements of trade or population become deteriorated. It becomes then an important question as to what may be done to remedy the difficulty. On this point chemistry and bacteriology, particularly the latter, gives us much information.

Speaking generally, the substances in water may be either in solution or suspension, and the objectionable ingredients may be in either or both these classes. While we are yet igno-

rant of the exact character of disease-producing agencies, yet it is well understood that they are mostly destroyed by brief exposure to a temperature of 212° F. Simple boiling of a sample of water for a moment will be sufficient to kill any living germs which may be present; such a method is only applicable on the small scale. For some time the tendency has been to assume that the capacity of water to convey specific diseases depended on living micro-organisms. A natural inference from this was that any method which would separate these would render the water harmless. Experiments have shown that even the subsidence of fine particles through the water will remove a very large proportion of the microbes. Certain chemical coagulants have also the same power. A turbid water may be rapidly and satisfactorily improved by the use of alum, in the proportion of about one grain to the gallon. This method, like that of boiling, is not so suited to use on the large scale, except by special contrivances, but well-known processes of filtration involve the use of this plan. As a household remedy in cases in which turbid water supply occurs, the alum method is quite suitable.

Filtration is of course the most obvious and the most convenient method of purifying water. Observation has, however, shown that it is not nearly so efficient as might be supposed. In judging of the efficiency of filters it must not be forgotten that the most recent investigations into the causation of disease, tend to give considerable weight to the chemical products of organic decay and microbic action, so that even after all solid suspended particles are removed, these dissolved products may be present and active.

An absolutely clear water, therefore, may be dangerous.

Dr. Plagge, of the Hygienic Institute of Berlin, made a number of careful tests of filters with the following results:

Carbon filters not only permitted the free transmission of micro-organisms, but in some cases the number of these in the filtrate greatly exceeded that in the unfiltered water. In one case, the unfiltered water yielded 68 colonies per c. c.; the filtered 12,000. Frankland also found a similar result, and, as he remarks, the filtering medium obviously acts as a hotbed for the development of the micro-organisms.

The stone and sand filters were all found to be worthless.

The spongy iron filter yielded the following results: The unfiltered water yielded 34,000 colonies per c. c.; the filtered water, 18,000 to 24,000.

The paper filters yielded very unsatisfactory results.

The earthenware filters on Pasteur's principle gave, in nearly every instance, a filtrate practically free from micro-organisms. Thus in one case the unfiltered water yielded 284, and the filtered only 4 colonies per c. c.

The asbestos filters gave results essentially similar to those obtained with the earthenware filters.

The advantage of earthenware and asbestos filters is, that they will bear treatment with boiling water, on the application of dry heat, by which any organic life which may penetrate the pores or lodge closely on the surface, can be destroyed.

For the purification of drinking water on the large scale, sand filter beds have been found to be more efficient; but good results are obtained only under proper supervision and attention

to cleanliness and renewal of the filtering material.

The addition of a ferric salt to water is attended with the same decomposition and formation of a precipitate as with alum, and the reaction has been utilized with great advantage in the purification of water. One of the methods proposed was by treating the water with spongy iron, by which a certain amount of the iron is dissolved and is subsequently removed by passing the water through sand filter beds. It was found, however, that the iron soon lost its activity, by reason of the formation of rust, which prevents further action. This difficulty is removed by the use of granular iron in an iron cylinder, rotated while the water passes through; the iron is brought into thorough contact with the water, and there is sufficient abrasion to keep its surface clean. The time of contact with the iron of course depends upon the relative impurity of the water. For Antwerp water, which is purified by this means, the maximum effect is accomplished in 35 minutes. After leaving the cylinder, the water is passed through sand filter beds in which the iron is oxidized and removed. Examination of the purified water shows it to be practically sterilized, and the quantity of nitrogen obtainable by potassium permanganate is reduced to from one-half to one-third the amount which the water originally furnished.

The experiments of Dr. P. Frankland have shown that micro-organisms, at least those which are capable of development in gelatin solutions, may be completely removed by the use of powdered coke as a filtering material. With this, as with all similar materials, the best results are only secured by

frequent renewal and a not too rapid rate of filtration. The coke at the same time effects a decided reduction in the amount of organic matter in the water.

A most important point in connection with public water supply is that of storage capacity. From all points of view this is essential and yet it is often overlooked. The storage of water improves it, not only by the opportunities it gives for subsidence, but the transformations that are produced in the bacterial life. While little can be learned by a single examination of water, much can be discovered by frequently repeated and regular examinations to be carried out by any person of reasonable intelligence. When, therefore, a community decides on the general availability of a given supply of water, the first endeavor should be to secure such control of the territory likely to effect that supply, as will prevent absolutely a deterioration from preventable causes. Next, ample storage capacity should be secured, not only that the community may be saved from the serious results of an accidental failure of the supply, but that if it is inherently variable in quality, or unavoidably deteriorated, an intermittent use of it may be practicable; that is to say, the water stored while it is in good condition, and this stock used as long as the supply is defective. History, we are told by a great authority, is philosophy teaching by examples, and we may find ample proof of it in sanitary history. The condition of the water supply of the city of Philadelphia is a case in point. The Schuylkill Navigation Company, a nearly moribund corporation so far as any business activity is concerned, has the first right to the water of the Schuyl-

kill river, and some years ago during a summer drought actually asserted this right and compelled the city to pay a large sum for taking the water in quantity sufficient to interfere with the Company's business. Then the river is subject to turbid freshets, and is often decidedly inferior in quality, but is also often very satisfactory. The storage capacity at command has not kept pace with the increased population, hence the water has to be used directly from the river. Such a city it seems to me ought to have reservoir capacity for not less than 30 days supply, the reservoirs being so arranged that no water need be used that had not been undergoing at least ten day's subsidence. By proper engineering, construction and analytical control, water could be pumped into the empty sections of the reservoir while it was in good condition, and as soon as turbidity or marked impurity occurred the flow into the reservoirs could be stopped, and the stored water resorted to until the condition of the supply again improved. Ample storage capacity is also an advantage in the employment of any filtration system, or in the use of any process of chemical treatment. Much opposition would probably be occasioned by the introduction of any system of chemical precipitation, but I do not think there would be any scientific objection to it in cases in which other means were not at hand.

The effects of aëration of water have been spoken of favorably by some writers, but there does not seem to be any substantial advantage in the mere introduction of air itself, by machinery into the flowing or standing waters. It has been observed in several cases that when the proportion of dissolved

oxygen becomes very low, peculiar vegetable organisms begin to develop, but nothing definite is known as to the effect of such. Carbonic acid has undoubtedly marked inhibitory influence on the micro-organisms, and contributes also an agreeable taste to water.

Summing up then these considerations we may say that rain water although theoretically the most pure, is practically unavailable and often unsafe. Subsoil and surface offer the most agreeable and uniform source, but require careful protection, and constant analytical control to prevent insidious disease-producing action. The most unexceptionable sources from a sanitary point of view will be the true deep waters, representing as they do masses of water that have passed through an enormous distance of soil, and have long since lost any contamination, but their practicable value is reduced by the fact that their mineral constituents are often objectionable. We find also that chemists do not yet know what are the actually dangerous bodies in water, although some progress has very recently been made in identifying specially bacilli. The basis for judgment is generally the detection and estimation of such ingredients as throw suspicion on the past history of the water.

We note further that for the protection and improvement of a city supply there is needed ample legal control of the gathering ground, abundant storage capacity, with sectional reservoirs for a systematic parcelling out of the water, and filtering attachments of simple character and easily accessible. Chemical preparations may be secured if the conditions render it necessary.

Though not directly connected with

the chemical or engineering features of this question, I feel impelled to observe in closing that I think that the furnishing of public water-supplies is essentially a matter of official control. It is the most valuable franchise that can be possessed, and should not be passed to hands of private parties or companies.

Under enlightened and scientific management of this question, it will be possible to furnish to all an abundant supply of that beverage which far excels all others in wholesomeness—pure, cold water.

PRECAUTIONS AGAINST DIPHTHERIA.*

Diphtheria is a contagious and infectious disease of great severity and fatality, and yet in many places there is great ignorance and indifference concerning its ravages. It is to be ranked with scarlet fever, as a malignant contagious disease, not only because of its large mortality, but also, because, like scarlet fever, it is frequently followed by physical defects, such as blindness, deafness and paralysis. It is, therefore, highly desirable that all persons should understand the nature of the disease and the means of preventing its spread.

Whenever a child or a young person has a sore throat, with a bad odor to its breath, especially if it has fever, it should immediately be separated from all other persons, excepting necessary attendants, until it is ascertained by a physician whether it has diphtheria or some other communicable disease. Mild cases may communicate malignant and fatal forms of the disease.

* Instructions issued by the State Board of Health of Pennsylvania.

HOW THE DISEASE IS SPREAD OR COMMUNICATED.

Diphtheria is believed to be caused by a special poison (contagium) which may be conveyed to persons previously unaffected, by personal contact, by infected clothing, rags, hair, or paper, or by any of the discharges of the body of a person sick of the disease. The seeds or germs of this terrible disease may be received from anything which has touched the sick person, as air, food, clothing, sheets, blankets, furniture, toys, books, wall paper, curtains, cats, dogs, and flies. *The discharges from the throat, nose and mouth* are believed most frequently to contain the germs of the disease and to communicate it to others, but the discharges from the *kidneys* and from the *bowels* are also dangerous. The diphtheria poison has great vitality, and may lie dormant in clothing, blankets, paper and houses for weeks, and even months. It seems to be able to travel in the air of sewers, and thus to pass from house to house; also to rise in the emanations from putrid privies and cess-pools. It can also, undoubtedly, infect foods, milk and water, and with them enter the bodies of children.

TIME REQUIRED TO DEVELOP DIPHTHERIA.

The time which may intervene between exposure to the poison of diphtheria and the appearance of the symptoms of the disease, varies. It may be from two to six days; the average is variously stated at from six to ten days, but the time may be extended to five or six weeks.

PERSONS LIABLE TO THE DISEASE.

Diphtheria is usually considered a disease of childhood. The greatest number of deaths from the disease

occur in children under twelve years of age. Adults, may, however, contract the disease and may die of it, although they usually have it in a milder form than do children; and yet an adult, with a mild form of diphtheria, may communicate a malignant form to a child. Children under two years and a half old are not very liable to the disease, especially if they are nursing from the mother. One attack usually prevents any subsequent one, but this is not always so. The idea that all children must have this terrible disease as well as the other diseases of childhood, should no longer be tolerated. If parents everywhere could only be brought to act intelligently, these diseases might become almost unknown. They are certainly not a necessity.

GENERAL PRECAUTION.

The disease being caused by a special poison, *this must be avoided by children under twelve years of age*, and by those who live in families where there are children.

Plain and distinct notices, but not necessarily unpleasantly conspicuous, should be placed on every house or premises where there is a case of diphtheria; and no child which has not had the disease should be allowed to enter, or to associate with persons who do enter, such houses or premises, *or to play with the cats and dogs from such houses.*

Adults whose services are not needed, should keep away from the disease. When necessity requires one to visit such house, the clothing should afterwards be changed and a bath taken before going where there is a child.

Beware of any person who has a sore throat. Do not kiss or take the breath of such a person. Do not drink

from the same cup, or use any article handled by such a person until it is disinfected.

Whenever a child complains of a sore throat, or is in the least hoarse, it should receive careful attention from its parents or friends until it recovers.

Whenever the disease is prevalent in any district, children should be removed from the day and Sabbath schools. They should also, at these times, not travel in the public cars or public carriages, the upholstered seats of which may harbor the poison.

Parents in whose families the disease has broken out, who are able to do so, may send their children unaffected with the disease, to homes in which there is no one liable to contract it. But, whenever such removals are made, the children should not mingle with the public until after the lapse of two weeks. From families in which this disease is prevalent, children must not attend school, church, or any public assembly, and adults should likewise abstain from attending church and public assemblies as much as possible.

Close attention should be paid to the sources of the water and the food supplies. If possible, only the purest water should be used. If there is any doubt about the purity of the water, boil it thoroughly before using it. Foods and milk should not be used which come from a house in which there is diphtheria, (or any other contagious disease,) for these articles may carry the germs of the disease.

People who do not own their own houses, but who move from house to house, should always inquire whether diphtheria (or any other contagious disease) has recently been in the house they propose to rent; and *it is well to*

demand from the owner or agent a written statement that those diseases have not been present for at least a year. If they have been present, do not rent the house under any consideration.

Anything which deteriorates general good health tends to render the system liable to disease—and, in this way, filth may be considered a promoter of diphtheria. *Perfect cleanliness should be enjoined in the house and all its surroundings.* Sewer gas must not be permitted to enter the house. All foul odors must be destroyed in privies and cess-pools by the appropriate disinfectants (See disinfectants, in this circular.) Let the house receive all the pure air and sunlight possible.

Newspapers, in reporting deaths, should mention ("*from Diphtheria,*") that people may be warned not to attend the funeral.

Cases of diphtheria should be reported to the local board of health or to the borough council at once. Do not send your clothing to a public laundry to be washed during an epidemic of diphtheria.

PRECAUTIONS IN THE SICK ROOM.

1. Whenever diphtheria is known to exist, or is even suspected, the first thing to secure is the *complete isolation (separation) of the patient from his family* (except the nurse) and from the public, and *to continue this isolation until a physician declares that all danger is over.*

2. *The sick room* should be in the upper part of the house, if possible. It should be as large and pleasant as can be, with means for free ventilation without causing cold draughts, which are especially to be avoided in this disease. An open fire place, with a lamp burning in it, is an excellent means of ventilation. Before using it,

the room should be cleared of all needless woollen or other draperies which might harbor the poison. The carpet had better be taken up, and only a few strips laid down on the floor to deaden the footsteps. All articles of furniture not needed should be removed from the sick room, taking care not to render it barren in appearance. A sheet, wet with a solution of the sulphate of zinc, should hang before the door connecting the sick room with the rest of the house, or in the passage way leading to the room. No person but the nurse and the physician should enter the sick room until the patient has recovered and the room has been disinfected.

3. The nurse should not mingle at all with the other children in the family unaffected with the disease, and as little as possible with the adults. Her outer dress should be of some material which can be washed rather than of wool, which harbors the disease.

4. Pocket handkerchiefs should not be used, but small pieces of rag employed instead, for wiping the nose and the mouth. Each piece, after being once used, should be immediately burned. The playthings used in the sickness should also be burned. A vessel, containing a disinfecting solution, should always be on the bed for the patient to spit into.

5. As the hands of nurses become, of necessity, frequently soiled by the excretions, a good supply of towels and two basins—one containing water with Condyl's fluid, or solution of chloride of lime, and the other plain water with soap—should always be on hand for the immediate removal of the taint.

6. All glasses, cups or other vessels used by or about the patient should be cleaned with scrupulous care, in boil-

ing water, before being used by others, and all foods or drinks touched by the patient and not consumed should be burned or buried.

7. The discharges from the bowels and the kidneys should be received on their very issue from the body into vessels charged with disinfectants, and, in cities where sewers exist, thrown at once into the water closet; but in country places, these excreta, after disinfection, should be buried in the soil, at least one hundred feet from any well, and in no case should they be thrown into a running stream, or into a privy vault. Rags which are infected with discharges from the bowels, nose, throat, eyes, or bladder, should be burned or buried.

8. The patient's clothing and the sheets and other bed clothing, whenever these are changed, should be thrown at once into a tub containing several gallons of water, to which has been added the standard disinfecting solution, No. 4, of this circular. Leave the clothing in the solution four hours and then give them a thorough boiling. Never carry any clothing, which is dry, from the patient through the rest of the house.

9. Perfect cleanliness must be enjoined in the room, the nurse and the person of the patient.

10. It is hardly necessary to add that, in this dangerous disease, the patient should always be under the care of a skilled physician.

PRECAUTIONS DURING CONVALESCENCE.

1. The patient should remain in the sick chamber, in complete isolation from the public, until his physician declares that there is no longer danger of his communicating the disease, and this will be until all sores in the throat

and about the mouth and nose are healed.

2. He should, before leaving his room, under the direction of the physician, take several warm baths. He should not appear in public until all the clothing he wore two weeks previous to his sickness, and that worn during his sickness, has been thoroughly disinfected.

3. He should be very careful of himself for some weeks, dressing warmly in woolen undergarments, avoiding chills and cold draughts, and using the eyes as little as possible for reading and study.

PRECAUTIONS IN REGARD TO BURIALS.

After death, the body should be wrapped in a sheet saturated with a solution of corrosive sublimate, or placed in an air-tight coffin, and buried as soon as possible. The body should not be exposed to view after being placed in the coffin. The funeral should be as private as possible, and certainly no children should be present. Undertakers should not furnish chairs or any other articles which may become infected. Such articles as they do furnish should be washed with a solution of corrosive sublimate before being used elsewhere.

PRECAUTIONS AFTER RECOVERY OR DEATH.—DISINFECTION.

This work should be done thoroughly, and generally, it will be best to employ an intelligent person *who has had experience in the work*. Recent investigations by a committee of the American Public Health Association show that some substances, on which much reliance had been placed, are of very little value as disinfectants. Only those which the committee recommend are here mentioned.

SOME ARTICLES SHOULD BE BURNED.

The child's playthings, used during sickness, paper books, articles of fur and wool, such as strips of carpet and pieces of badly-infected woolen clothing. In a city this is best done by making them up into a compact bundle in the sick room, thoroughly dampening the outside of the bundle with a solution of chloride of lime or corrosive sublimate in water, and then carrying to the glowing furnace under a large boiler in some industrial establishment. If in the country, these things should be carried into a field or a woods far from any habitation, and there, made to burn thoroughly and quickly, to do which the bundle should be opened and saturated with petroleum. Under no circumstances should these things be thrown into an open space or into running water.

STANDARD DISINFECTING SOLUTIONS
RECOMMENDED BY THE STATE
BOARD OF HEALTH.

1. STANDARD SOLUTION, No. 1.—Dissolve chloride of lime or bleaching powder of the best quality (containing at least twenty-five per cent. of available chlorine) in soft water in the proportion of four ounces to the gallon.

2. STANDARD SOLUTION, No. 2.—Dissolve corrosive sublimate and permanganate of potash in soft water in the proportion of two drachms of each salt to the gallon.

(NOTE.—1. This solution is highly poisonous. 2. It requires a contact of one hour to be efficient. 3. It destroys lead pipes. 4. It is without odor.)

3. STANDARD SOLUTION, No. 3.—To one part of Labarraque's Solution (*liquor sodæ chloratæ*,—U. S. P.,) of hypochlorite of soda add five parts of soft water.

NOTE.—Competent authority has pronounced this superior to all other disinfectants.

STANDARD SOLUTION, No. 4.—Dissolve corrosive sublimate in water in the proportion of four ounces to the gallon, and add one drachm of permanganate of potash to give color to the solution as a precaution against poisoning. One fluid ounce of this solution to the gallon of water is sufficiently strong. Articles should be left in it for two hours.

NOTE.—Corrosive sublimate solutions should be kept in wooden or crockery vessels.)

TO DISINFECT DISCHARGES FROM THE
PATIENT.

Use standard solutions Nos. 1, 2 and 3, keeping a pint of the solution used constantly in the vessel ready for any emergency. Let the discharges be passed directly into the solution, and then let a pint more of it be added, and allow the whole to stand for some time before being thrown into the sewer, or being buried.

TO DISINFECT CLOTHING, TOWELS,
NAPKINS, BEDDING AND SUCH TEXTILE
FABRICS AS CAN BE WASHED.

Use standard solution No. 4, *one ounce to the gallon of water*, or use one gallon of solution No. 1, in nine gallons of water. Let the goods soak in the solution for at least two hours,—better four hours,—before they leave the room. Stir them up so that the solution gets all through them. After disinfection, boil the goods thoroughly.

FOR THE DISINFECTION OF WATER-
CLOSETS, URINALS, SINKS, AND
CESS-POOLS.

CARBOLIC ACID SOLUTION.—Mix one pint of carbolic acid with two and a half gallons of water.

Standard solution, No. 4, diluted with three parts of water, may also be used in the proportion of one gallon (of the solution) to every four (estimated) of the contents of the vault. Standard solution, No. 1, would require to be used gallon for gallon of the material to be disinfected. Dry chloride of lime may be sprinkled over the contents of a privy, or standard solution, No. 2, may be made up by the barrel, and four or five gallons be applied daily during an epidemic.

TO DISINFECT THE SICK ROOM AFTER IT IS VACATED.

If it is possible, let the room be thrown wide open for several days, for a thorough airing. If papered, let the paper be all removed with care. Then let all the walls, the floors and the woodwork of the room, as well as the furniture, be washed with standard solution, No. 4, one pint to four gallons of water, or, of solution, No. 1, a quarter of a pint to a gallon of water. Let this work be done most carefully, getting the solutions into all the crevices. If any dust be present in the corners and crevices, wipe it out with a rag wet in the disinfecting fluid. *Don't stir it up with a brush or broom.* Last of all, whitewash the walls and the ceiling.

SULPHUR FUMIGATION

Is believed in by many as very efficacious, but should not be allowed to take the place of the scraping and scrubbing. It is performed in the following manner. Open wide all the drawers and closet doors. Hang on lines, opened up as much as possible, all the woolen articles which have been in the room during the sickness and which have not been disinfected and washed, then burn two pounds of sulphur for every thousand cubic feet

in the room. Every opening in the room—flues, doors, windows, cracks and crevices—must be closed, except the door by which the disinfector is to escape. The sulphur is to be burned in an iron kettle or other vessel set in a tub, containing a little water to guard against fire. A little alcohol or kerosene must be poured upon the sulphur by means of which it may be ignited. Leave the room quickly, for the fumes are highly poisonous when breathed and close the door tightly. Let the room remain closed twenty-four hours or more. Then air thoroughly for several days.

POISONOUS PLANTS OF THE FARM.

BY PROF. GEORGE G. GROFF, M.D., LL.D.
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On many farms, and about the farm buildings there are plants both wild and in cultivation which are poisonous to man and to beast. It may be of value to some to have them pointed out.

POISONOUS WILD PLANTS.

The *May-Apple* (*Podophyllum*) is common, growing in rich woods and in adjacent fence corners. The fruit, when ripe, is eaten by boys, but the root and leaves are poisonous. The plant bears a large white flower, and has two large shield-shaped leaves, which are sometimes gathered for greens with fatal results. Other common names for the plant are mandrake, wild lemon, raccoon berry, and hog apple.

Poison Vine (called also poison ivy and poison oak) is a common climbing plant found on old fences, and on trees, clinging to these by numerous

wiry rootlets which the plant throws out and into the object over which it climbs. This plant somewhat resembles the Virginia creeper, but that may be known by a five-fold leaf, while the leaf of the poison vine is three-fold. This plant poisons many persons, if they simply touch the leaves, producing a distressing eruption of the skin. The effects are worse in the morning when the dew is on the leaves.

The *Poison Sumach* (poison elder or swamp dogwood) belongs to the same family as the last. It is a small bush, slightly resembling the common elder bush, having the compound leaves of a sumac. This plant is not so common as the preceding, and grows in swampy places, or along rivulets. It is quite poisonous to some persons, affecting the skin as does the poison vine.

Wild Parsnips of several kinds are poisonous. It is well to avoid all wild plants which in leaves or seed-stalk look like the garden parsnip, and to remove them from the farm. The garden parsnip sometimes runs wild, and then it too becomes poisonous. These plants are generally found in low grounds and along rivulets, though sometimes on high ground. The cow-parsnip is a large, coarse-looking weed, four to eight feet high, growing in rich, low ground. This plant is covered with wooly hairs, while the wild parsnip, or cow-bane, is a smaller plant and free from wooly hairs. The cow-bane grows in swamps, and is considered very poisonous to horned cattle.

Fool's Parsley is a small plant, one to two feet high, found in waste places in the New England states, and is quite poisonous. The water hemlock also belongs to this family; it grows in swamps and along creeks. This

plant somewhat resembles "sweet cicely," and the lives of children are sometimes lost by their eating the roots which are very poisonous. The common hemlock of Europe is a smaller plant and is naturalized in some places; it is also poisonous. The only safe rule is to leave all wild plants looking like wild parsnips alone.

Indian Tobacco (eye-bright), a small plant to some extent used in medicine, is poisonous, but generally men and animals cannot eat enough of it to do them much harm.

Datura (thorn-apple or jimson weed) is a common, coarse and unsightly weed, found in rich grounds about the barn and other farm buildings. It has heavy stems, large, much dentated leaves, large purplish or white flowers, which have a mawkish odor. There is no danger from eating the leaves, but the dried seeds, found in the dry burr-like pods, are very poisonous and are occasionally eaten by children with fatal effects. This plant belongs to the nightshade family and should be carefully eradicated from the farm.

Stagger-bush (lambkill, calkill, etc.) is a shrub two and three feet high, found in many woods and on sandy plains. The plant bears somewhat leathery leaves, and pretty white flowers. It is said to kill lambs and calves, and to give sheep the staggers when they eat the leaves. Where this plant is abundant, bees cannot be safely kept, because the honey gathered from the flowers of this plant poisons the whole product.

The *Mountain Laurel* called also *rhododendron*, and well known from its evergreen leaves, beautiful flowers, and crooked wood, is one of our commonest mountain shrubs. The leaves and flowers are poisonous, but are not

often eaten by our domestic animals. There is a smaller laurel with narrow leaves, which is said to be more poisonous than the larger variety.

Nightshades, or bitter-sweets. There are two of these, one with black and the other with red berries. The plants being found about our houses, and the berries of bright colors, and thus attractive to children, there is considerable danger from these plants, and they should be plucked up by the careful farmer while the fruit is yet green.

Pokeweed (poke, pigeon-berry and garget) is a plant well-known for its purple berries. The young shoots are used in the early spring for "greens" or as a substitute for asparagus; but this is not a safe thing to do, as mistakes are often made, and when too old the plant is poisonous.

POISONOUS CULTIVATED PLANTS.

Tobacco, though so extensively used, is to those unaccustomed to its action, an acrid poison. Our domestic animals leave it alone, however, and human beings who meddle with it must take the ordained consequences.

The common garden *parsnip* is a dangerous plant to work about when it is wet with dew. It frequently produces dangerous eruptions where the leaves are handled at this time.

Oats frequently poison the men who bind it during harvest time, and the dust from it in threshing is often injurious. The eruption produced by oats is quite similar to that produced by the poison ivy. Damp and mouldy oats straw is unwholesome, if not also poisonous. It should not be used in filling bed mattresses. Oat straw is poisonous to pigs.

The leaves, flowers and all parts of the common *oleander* are poisonous,

and hence the plant should always be kept out of the reach of the children and our domestic animals. The fruit of the horse-chestnut is sometimes poisonous when eaten. The evergreen cherry of the Carolinas (*Prunus Caroliniana*) has poisonous leaves.

Aconite (monk's-hood), a plant cultivated in some yards and gardens, for its flowers. All parts of this plant are highly poisonous, so much so that careful people should banish it from their grounds. The root resembles horseradish, and cases of poisoning have resulted from mistaking it for that vegetable.

Foxglove (*Digitalis purpurea*) is cultivated in flower gardens for its long clusters of large, mottled, showy flowers. The leaves contain an active poison, and the plant is so dangerous that its cultivation should be abandoned.

In towns and cities horses are often poisoned by eating grass which has been removed from lawns and yards. The explanation is, that the leaves of some poisonous plant in cultivation have become mingled with the grass. The number of fatal cases of poisoning from this source is so great, that horse owners should be on their guard.

Pumpkin seeds contain a medical principle which, in large quantities, proves poisonous to chickens and turkeys, and is probably injurious to cows. Where large numbers of pumpkins are fed in the open air, the chickens eat the seeds, and some become paralyzed in the legs, while others walk as though intoxicated. It would be well to remove the seeds when pumpkins are fed to stock, for they probably counteract all the good the fruit does. Children should be guarded against the swallowing of the seeds of the watermelon which at times they

are inclined to do. Peach pits, peach leaves, and the bark of the wild cherry-tree all contain a poisonous acid (*hydrocyanic*), and they should not be eaten in any quantity.

Potatoes exposed to the light become green and unwholesome if not actually poisonous. The little balls on the potato vines are unwholesome. Decaying fruits and vegetables of all kinds are unwholesome and should not be eaten. Decaying fruits and vegetables in the cellar generate poisonous gases, which ascend into the rooms above to the injury of the inmates. Potato skins are sometimes poisonous when eaten. Mushrooms had better be left alone, unless gathered by one well acquainted with the edible species. It is claimed that the fruit and young branches of the yew tree are poisonous, also the leaves and roots of the lily of the valley.

In case of poisoning from eating wild berries, it would be proper to administer an emetic, such as a tablespoonful of ground mustard in a pint of warm water, or copious draughts of warm water to which a little grease or oil has been added. Tickling the throat with a feather will also bring on vomiting. The sufferer should be placed in bed and a physician called at once.

CREMATION VERSUS BURIAL.

BY J. M. FRENCH, M.D.,
MILFORD, MASS.

The principal arguments for and against the substitution of cremation in the place of burial as a means of disposing of the dead, may be considered under five heads, as theological, æsthetic, economical, sanitary, and medico-legal.

The theological objection that the practice of cremation is in some way antagonistic to the doctrine of the resurrection, is sufficiently answered by the question of Lord Shaftsbury, "What has become of all the blessed martyrs burned at the stake, if the burning of their bodies interfered with their resurrection?"

Probably the most potent objection to cremation in the minds of the majority of persons is the æsthetic one. There is something peculiarly shocking to most minds in the thought of burning the bodies of their friends. That a human form, but recently full of life and vigor, should be given to the flames and burned to ashes, seems little less than sacrilege. And when the form is that of one whom they have loved and cherished in life, cared for in sickness, and watched over in the hour of death, the idea becomes too repulsive to be endured for a moment.

It is probable, however, that this feeling is due in great measure to the influence of custom and prejudice. Certain it is that to other minds differently constituted and less under the control of the conventionalities of life, this method of disposal, whereby the corporeal remains of loved ones are reduced to their ultimate elements in a few hours, without offensive sight, or sound, or smell, seems infinitely preferable to that of burial, by which they are placed in the ground to moulder and decay, to be eaten by worms, to give off offensive gases, to saturate the earth with the noxious products of slow decomposition, and, per chance, to furnish ghastly grinning skeletons to delight the curious of future generations.

The feelings of this class of persons are well expressed by Col. Olcott, when

he says: "The more I might love my dead, the less willing I should be to give the fair form that once held an immortal spirit, to turn into putrid carrion under ground, and breed a myriad of loathsome creatures out of its rottenness. I pray heaven that it may be possible to commit my body, or that of any of my beloved, to the pure flame, that in one short hour shall purge it of dross, as gold is refined in the furnace seven times heated."

In this connection it may be noted that the general practice of cremation would do away with the opportunity for the desecration of tombs and the theft of dead bodies. The ashes of a Stewart might rest in peace; no guard would be needed over the remains of a Garfield; the potter's field would no longer be invaded by medical students, and the professional body-snatcher would find his occupation gone. At the same time the interests of science need not suffer, as it would still be possible to procure the requisite supply of material for dissection, by the same means which are now lawfully employed.

Turning now to the economic aspect of the question, we find that the expenses of burial vary greatly in different localities and under different circumstances, and are largely determined by the financial standing of the deceased and their families, and the social requirements of the circle in which they moved. It has been calculated that the amount expended each year in the United States for burial and funeral expenses, is greater than the annual yield of all our gold and silver mines; and equals the amount of all the failures of our business houses.

Formente — an acknowledged authority — calculates that a decent bu-

rial costs not less than one hundred dollars, exclusive of the price of the tomb or vault. This does not hold true, however, in many country localities, where it is often possible for a body to be buried with decency for less than half that sum. Among persons of means, on the other hand, hundreds and even thousands of dollars are easily expended. In addition to the expense of the funeral, there is the cost of a lot in the cemetery, or even of a single grave, which of itself is beyond the means of many poor people.

Concerning the cost of cremation, Mrs. Bird, in her "Unbeaten Tracks in Japan," says that in that country it ranges from seventy-five cents to three dollars. In Milan, Italy, where this method has been carried to a high degree of perfection, the cost of cremating a single body, as at present practiced, is eight francs, or \$1.60. In general, Formente estimates that the cost of cremation will not reach one-twentieth part of the price of an ordinary tomb and interment. Unlike burial, however, it is evident that the cost of cremating a body would be greater in sparsely populated districts, where the crematorium would seldom be called into use, than it would in cities and large towns, where it would be in constant requisition.

In addition to this, must be considered the economy of land and space, especially valuable in large cities, which would arise from the abolition of burial. The city of London requires nearly one hundred acres of land per year for the burial of her dead. But the space required for an ordinary vault twenty by twenty feet, would suffice to receive four hundred urns, each containing the ashes of one person, and placed in separate compartments.

It has been claimed by some, that the substitution of cremation for burial would rob the earth of its due supply of nitrogen, and thus tend to impoverish the soil. The answer is, that in the case of incineration, the nitrogen passes directly into the atmosphere in a gaseous form, and is eventually brought to the earth by the rain, when it serves to enrich the soil just as effectually as if it were originally deposited therein by the method of inhumation.

The sanitary argument is universally admitted to be in favor of cremation, and it is undoubtedly the strongest one which can be advanced. It is indeed unanswerable, and in itself sufficient to turn the scale. Let who will belittle it, the facts remain, and are rapidly overcoming the prejudices of centuries.

As a country grows older in civilization, its cemeteries become filled to overflowing, and the dangers from contamination of air, soil and water, increase in proportion.

Not long ago, a burial place in New England, and another in Pennsylvania, caved in, and exposed to view the thickly crowded bones of many generations.

A London florist recently purchased two cartloads of human mould, and when he came to use it, found it full of human arms, legs, and skulls.

The *London Lancet* declares that for 300 years, the grave-yards of England have been so full that like the one in "Hamlet," Yorick's bones have had to be dug out in order to put Ophelia's in.

Sir Henry Thompson, in 1874, stated it as his conviction, that "no dead body is ever placed in the soil, without polluting the earth, the air, and the water, above and about it;" and the truth of this statement is now gener-

erally admitted by scientific men everywhere.

It is a well-known fact that grave-diggers, though usually men of robust constitution, seldom live to old age. Instances are common of their sudden death from the effect of the foul air at the bottom of the vaults. Only a short time ago, three grave-diggers of Paris met with sudden death from the poisonous gases which were evolved while they were engaged in exhuming a body.

The experiments of Koch and others show that the blood of animals dying of splenic fever may be dried and reduced to a powder, and yet retain for many years its power to produce infection. The plague of Modena, which broke out in 1828, came on in consequence of excavations made in the ground where victims of the plague had been buried 300 years before.

Dr. Freire, of Rio Janerio, while investigating a recent epidemic of yellow fever, came upon the dreadful fact that the soil of the cemeteries where the victims of the fever were buried, was alive with germs, exactly similar to those found in the blood of the recent victims of the yellow fever in the hospitals. He therefore pronounces the cemeteries to be "nurseries of yellow fever, and perennial foci of the disease."

But this is not the only danger. Instances are common in which cemeteries are located in such close proximity to cities and villages, and on such a slope of land, that the leechings from the accumulated corpses of cemeteries must of necessity be filtered into the wells from which many families obtain their entire supply of water for drinking and domestic uses. The

result is not only disagreeable to contemplate, but must be in the highest degree detrimental to health, tending to produce diphtheria, typhoid fever, and other filth and germ diseases.

Other dangers to the public health connected with burial, are the liability to contract contagious diseases at public funerals, and also the perils to health from the prolonged exposure during the services at the grave, often to cold and wet on stormy days, usually with insufficient protection, and a part of the time with uncovered heads.

All these dangers and disadvantages may be avoided by the general adoption of cremation.

The medico-legal argument presents the only real advantages of the method of burial over that of cremation. First, in cases of doubtful identity, it is sometimes possible to settle the disputed point by an inspection of the body after burial. But cases of this kind should always be detained in the morgue for a sufficient length of time to allow full opportunity for identification; and after decomposition sets in, the most important evidence would be furnished by the clothing, which could easily be preserved for an indefinite period. Secondly, in cases where poisoning, or criminal violence is suspected, the result of the trial and the fate of the accused may sometimes depend upon the evidence furnished by a post-mortem or perhaps post-burial examination of the body. Safeguards have been and should be adopted, however, which will do away with this objection in the main. In Zurich, for example, every body is carefully examined by the district physician previous to being incinerated, and in all suspected cases an autopsy is performed. It must be re-

membered, also, that all traces of every active poison except mercury, arsenic, and antimony, are soon eliminated from the dead body by the processes of decomposition; and post-mortem examinations under such circumstances would prove of no avail or else positively misleading.

The disposal of the bodies of the dead by means of burning them, is no modern invention. Rather, it is one of the oldest methods known to man. The Bible tells us that the bodies of Saul and his sons were cremated (I. Samuel, 31, 12), and does not intimate that such a proceeding was anything unusual. In the modern practice of cremation, however, neither fire nor flames ever come near the body. It is simply incineration by means of dry heat, which reaches as high a temperature as 1500° or 2000° F. With the modern appliances, "a human body can be reduced, in a very short time, to a handful of clean white ashes, at an incredibly small expense." All the smoke and gases generated are passed through a heated absorbing retort, and are thus promptly destroyed, or shorn of all offensive properties.

The first white man cremated in America was Henry Laurens of South Carolina, whose body was burned at his own request in 1792.

Dr. Julius T. Lemoyne of Washington, Pa., erected the first crematorium in America, in which his own remains were incinerated about eight years ago, and, some years later, those of Dr. Gross of Philadelphia, America's greatest surgeon. The State of Pennsylvania now has four such crematoriums, all of which are put to frequent use, The American Medical Association has declared its unqualified approval of the practice, and its advocates are be-

coming daily more numerous, both in our own and other lands.

These things show the growth of public sentiment in favor of cremation, and lead us to hope for its still further advance. Custom and prejudice will continue to oppose it, but its sanitary and economic advantages will, we believe, operate powerfully to bring it into public favor and general use, especially in old and thickly settled regions, and in all large cities.

RAILWAY SANITATION.*

BY JOSEPH F. EDWARDS, M.D.

The fact that so many persons annually pass so very much time in railway cars, added to the fact that such an enormous proportion of the population of our State is engaged in the railway business, would make it seem that it might prove a not uninteresting nor unimportant task to ask what provisions have been made by our railroad authorities for the preservation of the health of those whom they employ and of those whom they transport. We will not go far wrong if we assert that 100,000 men are employed by the railways operating in this State. Assuming the population of the State to be 5,000,000, and allowing for each family five persons, we have 1,000,000 families, so that, remarkable as it may seem at the first blush, it would appear that one man out of every ten living in this State is employed in the railroad business. If this assumption be any way near correct, we can readily comprehend what an important significance "Railway Sanitation" should

assume. In seeking information relative to this subject I have been particularly impressed with the fact that our great railroad corporations seem thoroughly alive to the importance of the questions involved; my inquiries have been, everywhere, received with the greatest cordiality, and I have been assured that it is the desire of these corporations to thoroughly and heartily co-operate with us.

Let us first look into the question of how the railway companies guard the health of employees?

It must be conceded by all who have given thought to the subject, and we are glad to say that it seems to be so conceded by our Railroad Companies, that the better care they take of their men the better and greater will be the amount of work secured in return. The day has gone by when quantity of work done was the first criterion of a laborer's value; now quality comes first and quantity is really a secondary consideration.

Our railroads seem now to thoroughly understand that a man who is over-worked cannot do good work, for I have been not only gratified, but surprised as well, as I am sure those who hear me will also be, to learn that no railroad employee is obliged to work more than twelve hours out of the twenty-four. Had I received this information from any other source than that from which it has been derived I would have been tempted to doubt its accuracy, for we have all been accustomed to regard railroad employees as a terribly over-worked class. I am especially glad to be able to dispel this illusion, for my information is all official, and we can therefore dismiss this question of over-work, by resting assured that the railroad employees of

*Being the report from the Committee on "Preventable Diseases and the Supervision of Travel and Traffic" made to the State Board of Health of Pennsylvania.

Pennsylvania are not an over-worked class. But while we find that the men are not over-worked, we do find it necessary to suggest that if it be at all possible, their work should be so arranged that they could have their meals at regular hours. We are informed that this is done with all employees except train-men whose irregular hours of service at times preclude regular meal times. Nothing is more provocative of indigestion than irregularity in this respect, and nothing is more fatal to health and efficiency than indigestion. Hence, I would like to suggest, that, if it be at all possible, regularity in this important matter is a great desideratum.

I was particularly anxious to learn whether the fear of loss of position existed as a spur to urge a man to work when he was physically unfit for labor, and I am glad to be able to state that when an employee reports sick he is excused from work, his position is retained and restored to him upon recovery, and if he is a member of the relief association he is reported for benefits. It would seem to me well to suggest to our Railroad Corporations that a physical examination of applicants for position, just as in the Army and Navy, and in our Police and Fire Service would be an addition to their already excellent systems. They would thus secure a picked set of men, who would be less liable to call upon the Relief Associations, and who would be all the better able to perform the work required of them. Such examinations are now required for admission to the Relief Associations, but are not exacted of applicants for positions on the railroads.

As we notice freight trains passing along, our attention is called to the

little red caboose at the end of the train, and I have wondered whether it was not a foul little place to be occupied, as I supposed it was, by a considerable number of men. I am glad to say that I was wrong. The Penna. R. R., informs me that the train-men take considerable pride in keeping their cabooses clean; these cars contain about 2,000 cubic feet of space, and are occupied each by six men; the train in motion would cause such a current of air as to give an ample amount of fresh air for each occupant. The Reading railroad tells me that on their road these cars are not used for sleeping purposes.

Do railroad employees suffer from any disease special to their occupation?

On this subject I am informed that statistics are not sufficiently exhaustive to warrant an opinion, but I am led also to understand that engineers and firemen are particularly liable to suffer from diseases due to a disturbance of the equilibrium of the circulation, caused by the fact that one-half of the body, (that nearest the boiler) becomes greatly over-heated, while the other half (that nearest the window) is very decidedly cooler, and, as with the engineer, (who sits on the right) the left side of the body approaches most closely to the boiler, I would not be surprised to learn that distention of the heart might possibly be a condition somewhat more common to them.

Conductors and brakemen, I learn, are somewhat inclined to rheumatic affections, more especially in summer, when, after leaving a warm car, they stand on the platforms, exposed to the strong draughts created by the moving train, and it has been suggested that, with this danger in view, it would be well if the summer uniform of these

men comprised a coat that could be, and regulations that would require it to be, buttoned up all the time the men are on duty.

It would seem, in dismissing this part of the subject, that there is very little to be desired from a sanitary point of view in the relation of employer and employee so far as our railroads are concerned. The employer exacts little or nothing from the employee that is or can be prejudicial to his health and it offers him, with the very trifling suggestions made, every facility for doing his work in a way that need not and will not conflict with his first duty to himself and to his family, namely, the preservation of his health.

That such is the fact, points a very strong moral. When we can get the people to believe, to believe not because we tell them, but because they realize, that hygienic lives mean successful lives; when they come to understand that sanitation, far from necessitating an unpleasant and objectionable asceticism, far from causing us to be deprived of the real, rational pleasures of life, far from interfering with our material, realistic, worldly success, on the contrary, is the greatest of all possible adjuvants thereto, then will they come to look upon the subject in its proper light. That our great railroad corporations; organizations, that, for their successful existence must of necessity receive the very best labor of their employees, organizations that are usually in the very front ranks of human material progress; that they should deem sanitation a subject worthy of their careful consideration and practical recognition, strikes me as a very forcible reminder of the living reality of hygiene.

From a business point of view, railroads do nothing that is not pecuniarily profitable, and, since sanitary regulations form important parts of their systems, we are forced to the conclusion that "*hygiene must pay.*"

So much for the employees; let us see what protections to health the railroad companies provide for their patrons; the travelling public.

In the matter of ventilation and heating of passenger cars, I find that our railroads are fully alive to the importance of the subject and that the best known means of ventilation are in use. But I also find that the best known means are extremely unsatisfactory. I am sorry to say that while, in this matter, I am constrained to find fault, I am, unfortunately not prepared to suggest the remedy. It is a matter of common observation that our passenger cars are either extremely hot or unpleasantly cold, and it is a comparatively rare event to find an even, comfortable temperature unless it be due to the equability of the outside temperature. The heating and ventilation of passenger cars is a problem not yet satisfactorily solved, (unless the recent introduction of steam may settle the point of heating) though we can rest assured that the railroad companies are eagerly anxious to avail themselves of any and all suggestions on the subject. They are wisely conservative, in so far that they will not hastily adopt any innovations, but, when thoroughly satisfied of the practical utility of any suggestion they cordially adopt it at once.

Particularly is the need of better ventilation made manifest in sleeping cars. The comfort, convenience and practical utility of sleeping cars cannot be over-estimated, but their influence

on health is not good and will not be until they are better ventilated. We would impress the fact that this lack of ventilation is no fault of the officials, who have supplied the best known system, but it is because this best known system is not satisfactory. I have frequently heard men remark that the only time they feel drawn towards liquor in travelling is after they have passed a night in a sleeping car; this it would seem might be explained as because of the depressing effect of an impure atmosphere on the system making itself manifest by the call for an artificial stimulant.

While on the subject of sleeping cars, I would say that the measures to ensure cleanliness of bed-clothing are, with one single exception, all that could be desired. Linen is never used a second time without being washed and the blankets and mattresses are thoroughly aired at the end of each trip. The exception referred to is as follows: It is not an imaginary danger to suppose that a berth in a sleeping car may be occupied by some one who may have a disease characterized by a contagious discharge, such, for instance as purulent ophthalmia or some similar affection, and that some of this matter drying on a sheet and not being thoroughly removed by an ordinary washing may be the means of conveying the disease to the next or some subsequent person who uses this sheet. When we consider how promiscuous are the occupants of these berths, we have no right to say that this is not a real danger. For a remedy, I would suggest, that before washing, this linen be all rinsed out in a solution of corrosive sublimate.

As for the cleaning of passenger cars I am informed that they are

cleaned daily when in use, a large force of men and women being specially employed for this purpose, and, from personal observation, I believe that this work is well done, save on some of the smaller branch roads, where more attention to cleanliness of passenger cars is desirable.

The urinals and closets in cars are generally kept satisfactorily cleaned, but as they are at present they are eminently unsatisfactory. It would be difficult of accomplishment, but extremely interesting could we definitely ascertain how many cases of disease have been produced by the pollution of streams from the deposit of some passenger on an express train traversing our State at the rate of forty miles an hour. It is not necessary that these deposits should drop directly into a stream, they may fall on the road-bed and from there be washed by subsequent rains into a run, that may furnish the water supply of a village. It is not a flight of fancy to suppose that some of those mysterious outbreaks of typhoid fever in villages may be caused in this way. Fortunately, in this case, I think I can suggest a remedy, which will be taken up in connection with the question of closets in stations.

For urinals, the Penna. R. R., some years ago adopted a standard disinfectant, consisting of chlorides of copper and zinc and bichloride of mercury. This is used at stated intervals in all urinals and closets and other places where sanitary rules demand. In hot weather a lump of ice is placed in the urinals and this same practice we have seen to be in use on the Reading road; the road also uses disinfectants in the urinals.

I have been informed that the

problem of closets at stations is, as yet, not satisfactorily solved, though it is incumbent upon the station masters to see that these closets (such as they are) are kept clean and in proper condition. On the Reading system travelling inspectors are constantly looking after the sanitary condition of the stations including closets, while, on the Pennsylvania system, inspections are made periodically by superintendents and the assistant train masters, by the latter, at least once each month. I am constrained, however, to believe, that the sanitary conditions of many stations is not what it should be. I have reached this belief from personal observation of one suburban station that may be regarded as a prototype of or possibly an improvement on many others, since it is one of the fashionable suburban stations in the vicinity of Philadelphia.

At the location in question the track is elevated, so that there is a basement to the station house, in which more or less rubbish and a quantity of coal oil is found; there are two windows in the basement, but as I never saw them opened (until after I had so suggested), the damp and more or less foul atmosphere therein contained, had only one means of egress, and this was to be sucked up through the floor into the waiting room above by the warmer atmosphere there existing, and that it did so ascend was practically demonstrated by the failing health of every master who ever had charge of this particular station. The closets at this station were on the ground (at the foot of a steep flight of steps) and close to the station; so that I have, more than once been perceptibly reminded of the proximity of these closets by the odor that arose there-

from to be disseminated throughout the waiting room. There was an overflow pipe from these closets emptying into a small stream that meandered away through meadows wherein the neighboring farmers were wont to pasture their cattle. Certainly not an ideal condition of affairs, yet it is hardly fair to assume that this is a solitary instance. But for the remedy. To avoid repetition I would here refer to the article on "A NEW DEPARTURE IN THE DISPOSAL OF SEWAGE," on page 177 of "THE ANNALS OF HYGIENE," for last April. A modification of this same system, it has occurred to me might be available for use in trains and it could certainly be advantageously used at stations.

It is wise policy only to make suggestions that are practicable, and while it would be ideally correct to suggest that corps of trained inspectors should be employed by all of our railroads, yet such an addition to the force of employees would be a great expense, and the same result can I think be attained in a much simpler, less cumbersome, and less expensive way. I would respectfully suggest that the management of our railroads should make it necessary for all of their employees to inform themselves of the elementary principles of hygiene and then each man is qualified to, and can be made act as an inspector in his particular locality.

It cannot be questioned that from a walking case of small-pox, or of diphtheria, or of typhoid, or, indeed, of any disease the most virulent form of the disease may be contracted; therefore it is of interest to learn that any officer or agent of the railroad companies has the authority to refuse

transportation to a suspected case of contagious disease.

As to the transportation of the sick, we learn that special cars are provided for their transportation, upon application and the payment of fixed amounts and the Penna. R. R., will, in special cases, detail one of its medical corps to accompany the sick person. Dead bodies will not be received by the Reading road, for transportation, without a certificate from the Board of Health, or from a physician, that they are free from contagion, and the corpse must be securely enclosed in a box or casket, and the same rule is in force on the Pennsylvania.

Having considered the position of the employee and the passenger, we come to the transportation of cattle, and we here learn that, by rule, cattle must be properly fed and watered en route, and that at the end of each trip, the cars in which they have been transported must be thoroughly cleansed.

We find that on the Penna. road a box is furnished to each engine and station, containing bandages, rubber tubes for tourniquet, lint and plaster. At some stations in cities additional materials are furnished, and one person instructed at each place to apply the same, while, on the Reading system we learn that such outfits are kept at such convenient stations or points as to be readily available when required.

Here then we have briefly reviewed the question of "Railway Sanitation," and our investigation has been a most satisfactory one. I am confident that it would be impossible to enter a field wherein there would be found more to praise and less to criticise, and we feel sure that the few suggestions herein made will be warmly welcomed, and,

if, upon mature reflection, they are deemed worthy, will be favorably acted upon. Warmly should we congratulate the great Railroads of this State for the advanced position in sanitation that they have assumed, and strongly should we urge the imitation of their excellent example by all employers of large numbers of employees. I cannot close this short report without acknowledging in the most emphatic way the extreme courtesy displayed by all the railroad officials with whom my investigations have brought me in contact, and, in an especial manner am I indebted to the kindness and polite attention of Mr. H. Stanley Goodwin, General Superintendent of the Lehigh Valley; to Messrs. I. E. Sweigard and A. A. McLeod, of the Reading, and to Dr. Samuel W. Latta and his brother W. J. Latta of the Pennsylvania systems.

Since the inquiries were made that are embodied in the preceding report, I am deeply gratified to learn that most excellent sanitary regulations, in addition to those already in force, have been issued by both the Philadelphia and Reading, and the Pennsylvania Railroads. So admirable are these regulations that we append the circulars in full:—

THE PHILADELPHIA & READING R. R. Co. }
GENERAL OFFICE,
227 SOUTH FOURTH STREET. }

The attention of all officers and employes is directed to the following regulations, in regard to disinfection and the prevention of disease:—

All stations, yards, shops and adjacent grounds, as well as the line of road in general, must be kept absolutely clean and free from decaying animal or vegetable matter and from rubbish of every kind. Especial care must be taken to remove offensive odors and to destroy disease germs where these are believed to exist, and for this purpose, disinfectants must be freely used wherever necessary.

The floors and seats of privies, and the

floors, urinals and hoppers of closets in passenger cars, must be thoroughly scrubbed once a week, or as much oftener as may be necessary. A suitable quantity of proper disinfecting material must be kept in urinals at stations, and in those of passenger cars when in service.

Passenger cars must be carefully ventilated, and the paint, glass and upholstery kept neat and clean. The floors of stock and other freight cars must be cleaned immediately after the cars are discharged, and the refuse must be burned, if it cannot be otherwise disposed of.

Great care must be exercised to prevent the pollution of water which is used for drinking and household purposes. Privies, stables and sewers must never be so located, that the drainage from them finds its way into the water supply. If it becomes necessary to use water which is suspected of being dangerously impure, it should be boiled and allowed to cool and settle, before it is used.

All drains and sewers on the Company's premises must be thoroughly flushed with clean water once a week, if the water supply will admit.

Privy wells must be made at least five feet deep and the contents must never be allowed to accumulate within three feet of the surface. In disinfecting wells, sulphate of copper, commonly called blue-stone, or sulphate of iron, known as copperas, may be used to advantage in a dry state, care being taken that the disinfectant reaches all parts of the well.

When a case of infectious disease is found in a passenger car, or at a station, a physician should be called at once. The car must be removed from the train without delay, and it must not again be placed in service until it shall have been thoroughly cleansed and fumigated. Such articles as clothing, bed linen, &c., which may require disinfection, should be boiled in water for at least half an hour.

Division Superintendents will be held personally responsible for the enforcement of these rules, and to that end, they must provide for thorough and systematic inspection of the property under their charge

A. A. MCLEOD,
Vice-Prest. and Gen'l. Manager.

PENNSYLVANIA RAILROAD COMPANY.—
Philadelphia, Wilmington & Baltimore Railroad. Northern Central Railway. Baltimore & Potomac Railroad. Alexandria & Fredericksburg Railway. Alexandria & Washington Railroad. West Jersey Railroad. Camden & Atlantic Railroad. Camden & Philadelphia Steamboat Ferry Company. West Jersey Ferry Company.

CIRCULAR IN REGARD TO DISINFECTION.

The efficiency of the service depending largely on the health of the employes, the

attention of all is called to the following points, in regard to disinfection, and general preventive measures against disease.

CLEANLINESS.

One of the most important means of preventing disease is cleanliness, not only of the body, but also of surroundings. No disinfectant or medicine can take its place. The following rules must be observed :

I. All shops, stations, and adjacent grounds, as well as the track between stations, must be kept scrupulously clean. DECAYING ANIMAL OR VEGETABLE MATTER, AND RUBBISH OF EVERY KIND MUST BE BURNED.

II. The floors and seats of privies everywhere must be scrubbed with soap and water not less than once in two weeks, and the vaults emptied whenever the material accumulates to within three feet of the surface of the ground. In no case should a privy vault be less than five feet deep.

III. Drains and sewers must be flushed with fresh water as often as once a week, if the water supply will admit.

IV. Passenger cars must be thoroughly ventilated, and the plush beaten frequently. The paint and glass must be washed at least once in two weeks.

V. THE CLOSETS OF PASSENGER CARS, ESPECIALLY THE FLOOR, URINAL, AND HOPPER, MUST BE WASHED AT LEAST ONCE A WEEK WITH "P. R. R. DISINFECTANT," ACCORDING TO THE DIRECTIONS GIVEN.

VI. Freight cars at stations must be cleaned before leaving the station, and if the refuse from these cars cannot be satisfactorily disposed of otherwise, it must be burned.

WATER SUPPLY.

Too great care cannot be exercised in keeping the water supply used for drinking and household purposes free from contamination, impure water being one of the most effective means of spreading disease. The following points should be observed :

I. Privies and stables, and outlets of drains and sewers, are frequently so located that the drainage therefrom finds its way readily into the water supply. This should never be.

II. As a rule it is better to take water supply from rapidly running streams than from any other source, and always some distance above the nearest contamination. Springs, where the high land surrounding them is free from impure drainage, are excellent sources of water supply. Wells, especially those near dwellings, should be avoided.

III. IN ALL CASES WHERE A WATER SUSPECTED OF CONTAMINATION MUST BE USED FOR DRINKING, OR AS A CONSTITUENT OF FOOD, SUCH WATER SHOULD BE BOILED AND THEN ALLOWED TO COOL AND SETTLE BEFORE IT IS USED. IT IS BETTER NOT TO

ADD ICE TO THE BOILED WATER, AS ICE ITSELF IS FREQUENTLY CONTAMINATED. Boiled water may be readily cooled by having it in a metal or earthen vessel, and after wrapping a wet towel around the vessel, placing it in a current of air, or by placing ice in contact with the vessel outside.

IV. Garbage and rubbish of all kinds near the water supply, must be burned or removed.

DISINFECTION.

The best disinfectant known is simply fire. Burn up everything in the shape of filth, and it will never cause further difficulty. In some cases however, this is impossible, and in such cases disinfectants and antiseptics are properly used, especially, [1] to remove offensive odors, [2] to render decaying organic matter which cannot be burned less dangerous, and [3] most important, to destroy disease germs. It is believed that the "P. R. R. Disinfectant" will accomplish each of these results. If it is properly used after filth and rubbish of all kinds have been burned or disposed of as directed above, offensive odors every where will be reduced to a minimum, and the danger of disease will be very greatly diminished.

I. THIS DISINFECTANT MUST BE USED FREELY, and all persons in charge of shops, stations, cars, or any portion of the Company property, will be held strictly responsible that the property is as clean and free from odor as possible. P. R. R. Disinfectant is made under the supervision of the Laboratory at Altoona, and may be obtained in boxes holding two dozen bottles by making requisition on Altoona Shops. Directions for use accompany each bottle. For use where slight stain is objectionable, a special form of P. R. R. Disinfectant is made which does not stain.

II. For disinfecting clothing, bed linen or other articles which have been contaminated, and which it is not desirable to burn, the best disinfectant is simply to boil in water for at least half an hour.

III. Sulphate of Copper, or Blue Vitriol, also known as "Blue Stone," is a very valuable disinfectant. In damp places, in privy vaults, and in cesspools, it may be used freely in the dry form, being simply coarsely powdered and scattered around. In other places it should be dissolved in water before use, not less than one-half-pound to the gallon of water.

IV. Sulphate of iron, or Copperas, is also valuable, especially as an antiseptic. It is much cheaper than Sulphate of Copper, and should be applied in the same way, and for the same purposes, except that two or three times as much should be used.

V. Ice is very valuable in preventing decomposition, and in this sense is a good an-

tiseptic. It may be used with great advantage on passenger cars, and in the urinals of water closets at stations. In all cases where the supply will admit, a lump of ice must be kept in the urinal of every passenger car while the car is in service.

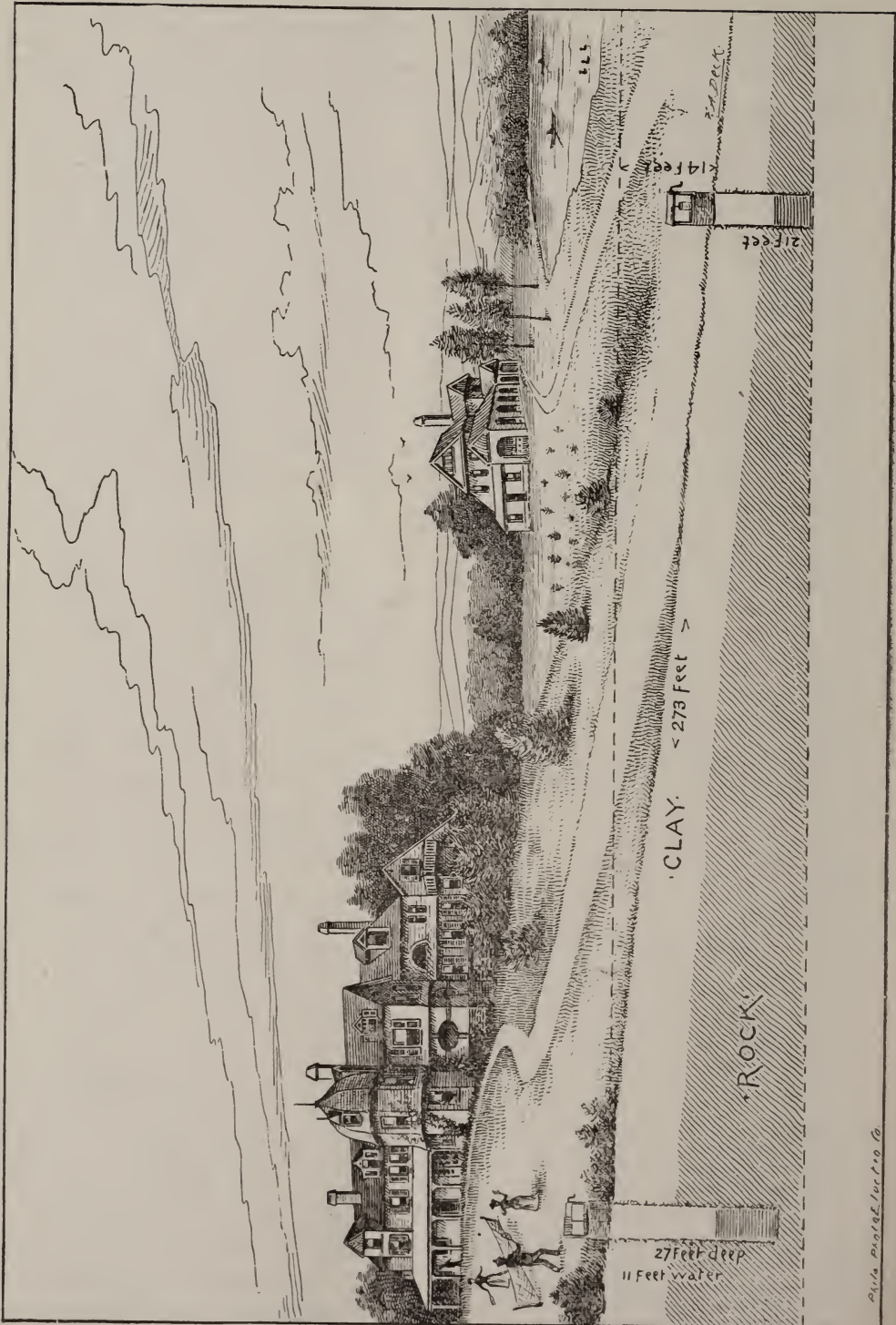
INFECTIOUS DISEASES.

If at any time a case of infectious disease is found at a station, in a passenger car, or elsewhere on the Company's property, a physician should be immediately sent for. The car should be removed from the train as soon as practicable, the doors locked, and it should not again be used until it has been fumigated.

The foregoing has been approved by the Pennsylvania State Board of Health, and all employes are expected to heartily co-operate in the above measures for preventing disease, and they are earnestly recommended to apply them also at their own homes.

CHAS. E. PUGH,
General Manager.

CANALS AS NUISANCES.—Canals are nuisances prejudicial to human health, and we are glad to learn that the Pennsylvania Railroad has decided to abandon the old Pennsylvania Canal that has for so many years traversed the central portion of our State. Sluggish bodies of water are excellent breeding grounds for disease germs, and the canal passing through a town has always afforded a very convenient place for the careless housewife to deposit her household refuse. But, bad as the canal was, its abandonment will be even worse, unless some proper precautions are taken. If simply abandoned, there will remain a ditch for rain water to lie in and garbage to rot in, so that, in time, pestilences will be inevitable in the towns and villages traversed by the canal bed. It is imperatively necessary that this ditch be filled with clean earth, not throughout its entire length (this would be too costly) but, wherever it passes through towns and for some distance away from them on either side.



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EDITORIAL.

THE CONTAMINATION OF COUNTRY WATER WELLS.

Every now and again, in all branches of knowledge, some fact is elicited that would seem to modify all formerly held ideas, at the same time that it would appear to definitely establish certain rules and regulations.

Such a fact, we believe, has been brought to our notice by Dr. Morris J. Lewis, of this city, and we are strongly inclined to believe that it is one of the most valuable and significant facts that has been unearthed in sanitary science for many a long day.

One of the most vital, interesting and perplexing problems in rural sanitation has always been the relation of the cess-pool to the water well.

Possibly we will not be accused of exaggeration, if we venture the assertion that in country districts more sickness is caused by foul water that is fouled by cess-pool drainage than from any other single cause. This fact seems to be pretty well recognized, even by the laity, so that the first thought of an intelligent person seek-

ing a home in the country is to secure a pure water supply. If a sanitary expert is consulted, before he has read this editorial, he will tell you that you must locate your cesspool at a lower level and as far away from the water well as possible. If you were to reply that you intended to locate the cess-pool at a point where the surface of the ground was fourteen feet lower than that where the water well would be dug and two hundred and fifty feet away therefrom, nine out of ten of these experts would have told you that there was, practically speaking, no possible danger of contamination of your water by cess-pool drainage. Such have been our ideas.

That these ideas are erroneous, the facts which are elucidated by the drawing on the opposite page, will amply prove. We have there two water wells, the one fourteen feet lower than the other and two hundred and seventy-three (273) feet away from it; yet, *when we pump water from the Upper well we decidedly lower the water in the other.* This fact cannot be explained on the hypothesis that both wells are fed by the same water-bearing strata, for such would only account for the water remaining stationary in the lower when we pumped from the upper well, but, since it is absolutely and decidedly lowered, we must concede that the water from the lower is drawn into and pumped from the upper well. This does not imply that the water flows up hill; we do not assume this hydraulic impossibility; but it does practically demonstrate the fact, already well known to hydraulic engineers, that underground currents cannot be determined by the configuration of the surface.

So much then for the facts; now

for their sanitary application; let us suppose that, instead of being a water well, this lower excavation was a cess-pool, it would seem very evident that the water in the upper well would be contaminated by cess-pool drainage, notwithstanding the facts that it was on a much higher level and so very far away.

According to our way of thinking, one of the most important lessons in hygiene that has ever been taught is to be derived from this instructive case; this circumstance makes us feel absolutely convinced that cess-pools must go; with this instance ever before us we could never feel, with *absolute certainty*, that any well was *absolutely* free from the danger of contamination, no matter how wisely nor how intelligently the well and the cess-pool might be relatively located.

What, then, shall we do with our household refuse. In our issue for April last, we described a new method of sewage disposal, which, we then stated we believed to be about perfect both in theory and in practice. Since that publication we have continued to think about and look into the method which we then described, with the result that, if possible, we believe in it even more firmly than we then did. So firmly are we impressed with the superior merits of this method of sewage disposal that it is about to be introduced into our own home, to the exclusion of the dangerous and insidious cess-pool. With the experience, that we here picture, before us, we have come to very firmly feel that when one deposits human refuse in the ground it is entirely enigmatical as to where and when some of this poisonous matter will find its way into our own or somebody else's drinking water.

We very forcibly feel that the only way to protect our water wells from faecal defilement is to keep faecal matter out of the soil and there is known to us only one way in which this can be satisfactorily accomplished and this one method we have already described in the issue of this journal before referred to.

RAILWAY SANITATION.

Elsewhere, in this issue, we publish a report full of interest to the travelling public. By its perusal we will learn that our great railway corporations are extremely alive to the importance of hygiene, and that they have instituted most excellent sanitary regulations for the protection of their patrons.

There is one point, however, in which we find a seeming deficiency to which we would like to call attention. Excellent as are their sanitary regulations, particularly those found in the circulars appended to the report, we fail to find efficient means provided for their execution. From personal observation we know that it will not answer to trust the execution of these directions to local officials, for since the issuance of these circulars we have seen and smelt and have been nauseated by what was decidedly the filthiest closet we have ever encountered, located at a station on the main line of one of the two roads whose circulars we publish.

We would like to suggest that these railroads should institute a system of traveling inspection by competent sanitary experts, or if this would prove too costly, that they should require, from all their employees, a knowledge, at least, of the elementary principles of hygiene, for, it seems to us, that if all the officials could be made to intelli-

gently understand the importance of the directions contained in these circulars they would more willingly and more faithfully see that they were executed.

THE PREVENTION OF DIPHTHERIA.

THE ANNALS OF HYGIENE is not intended alone for *immediate* use ; our idea being that if our readers will preserve the different numbers and at the end of the year bind them into a volume, with the full index that we then furnish, they will have always ready a reliable reference book that may be consulted as emergencies arise. It may not be (and we hope that it is not) that any of our readers have, at the present time, that terrible disease, diphtheria, among them ; but no one can foretell when it may appear. That those who read this journal may be always well armed against disease, we print in this issue, a circular on "The Prevention of Diphtheria" that has been issued by our State Board of Health. Preserve it carefully, for no one knows how soon the information it contains may be sadly needed.

THE DISCONTINUANCE OF THE STATE WORK AT JOHNSTOWN.

The reports, which we publish in the latter part of this issue, will furnish a very clear idea of the work that has been done at Johnstown.

On the first of the present month, the State work, under the direction and supervision of the State Board of Health, ceased, and it is the desire of the Board that the clear and concise statement shall be made relative to the stoppage of this work that the Board was compelled from the standpoint of

duty to the State to stop the work as soon as it felt that the immediate danger of pestilence had been averted.

It is, we believe, not thoroughly realized what an extraordinary and, we feel inclined to say, unparalleled exhibition of humanity, has been displayed by Governor Beaver in connection with this stupendous sanitary work in the Conemaugh Valley. It must be understood that no State provision had been or has been made for this work, and then we can gain some slight idea of the gratitude that these stricken people owe to Governor Beaver when we realize that he has rendered himself *personally* liable for the enormous sum of nearly \$400,000, in order that the pestilential conditions threatening Johnstown and vicinity might be removed.

HAGER'S WATER TEST.—It is an unfortunate fact that we have no easy, simple, household test for water. The examination of water, as to its wholesomeness or otherwise, is an elaborate process requiring the services of a skilled analyst. However, there are certain tests recommended which are good as far as they go and which may be tried by any one. Here is one of them :

"Pour one tablespoonful of clear solution of tannin (a heaped teaspoonful of tannin to a gill of rain water) into a tumbler full of the suspected water. If no turbidity occurs within five hours, the water is good ; if turbidity occur within one hour, the water is decidedly unwholesome."

If no turbidity occurs, we would not be willing to accept this fact as positive proof that the water was good ; but if turbidity does occur, and the water was from our own well, we would, at once, have it examined by a capable analyst.

NOTES AND COMMENTS.

THE GREAT BABIES OF 1809.—Eighty years ago Tennyson, Darwin, Gladstone, Lincoln, Oliver Wendell Holmes, Edgar Allen Poe and Lord Houghton were born. 1809 was a great year.

CHEAP DISINFECTANT.—A cheap and fairly effective disinfectant can be made by dissolving a bushel of salt in a barrel of water, or as much salt as will dissolve, and with this water slack a barrel of quick lime. This forms a sort of lime, which may be used freely in cellars, out-houses, &c. Smaller proportions may be tried.

A PROFESSIONAL DISCIPLINARIAN. The following advertisement appeared in a recent number of the *London Tablet*: "To parents—Unruly girls and boys of any age visited and punished at their homes by a thorough disciplinarian accustomed to administer corporal punishment. All bad habits cured by one or two attendances. Fee, five shillings for two visits, Address 'Birch.'"

THE HYGIENE OF BATTLE.—If there is such a thing as hygiene of actual battle, one element of it will be found in the adoption of the "Smokeless Powder" that has, very recently, been successfully used in Germany. The irritating, smoke-laden atmosphere of a battle-field must be very injurious to the respiratory organs as well as the eyes of those of the combatants who are not killed by "lead-poisoning."

IF HE WAS A HOG, HE WAS A JUST ONE.—There was a man at the Cole-

man House, Asbury Park, last Summer, who attracted much attention by ordering at each meal everything on the bill of fare. He was fond of ice cream and on one occasion ordered five plates in succession and ate them all. When word was sent by the head waiter that such orders would have to be charged extra, he said: "Charge ahead, but when I like a thing I want enough of it."

SAMPLING PATENT MEDICINES.—The *Burlington Free Press* tells us that the editor of a religious paper in Michigan solemnly promised his subscribers that he would sample all the patent medicines offered to him by advertisers, before he would insert the notices. This was four years ago. He is now an inmate of an inebriate asylum.

CHILDREN'S SLEEPING ROOMS.—If every housekeeper would insist that the occupants of her apartments—children, help, boarders and visitors—should air their beds and throw open windows each morning before leaving their rooms, unless beating storms made this impracticable, we would have less ailments of lungs and fever in our midst. To breathe, night after night, unclean, vitiated air, is enough to poison and disease the soundest lung and undermine the strongest constitution created.—*The Home*.

ESCAPE OF GAS INTO THE STREETS.—Dr. Edwin A. Martin, chemist of the New York Health Board, has made a report to that body regarding the escape of gas from the subways. He says: "There are 1,100 miles of gas mains in New York, and 10 per cent. of the gas made escapes. Last year there were manufactured 8,660,000,000

cubic feet of gas, and 866,000,000 cubic feet escaped into the streets. There is great danger of explosion from the accumulation of gas in the subways, and some means should be taken to give them ventilation.

WARS VERSUS DISEASE. —An eminent statistician has recently computed that the cost in human life of the wars of the last thirty-four years has been 2,253,000. Dr. Billings tells us that there are 100,000 deaths annually, in this country, from preventable diseases. Thirty-four times 100,000 makes 3,400,000; so that in this country alone more persons have been killed during the past thirty-four years by what should be called criminal negligence than have been slaughtered by all the wars of all the world. There is a tremendous moral in these comparative statements.

FIRE WITHOUT SMOKE. —Where there is much smoke there must be some fire, but, paradoxical as it appears, there may be a very big and effective fire without a suspicion of smoke. Witness the world-famous locomotives that draw the two-hour express trains of the Reading Railroad between Philadelphia and New York, and the eighty minute trains to Atlantic City. The fuel used on all the Reading Lines is hard, clean anthracite, hence travelers enjoy a degree of comfort unknown upon roads burning soft and sulphurous bituminous coal.

LIGHT THE FIRES EARLY. —It will be well for us if we start our fires early this fall. Ever since early spring, throughout the summer, we have had so much rain and so little

sun-shine that our houses and all their contents have become and now are unusually damp. If we keep the fires burning even on comparatively warm days, though it may be necessary to open windows and doors to make the temperature endurable, we will, thereby, dissipate some of this excessive dampness. We doubt not that this simple precaution will prevent many "colds," and much rheumatism and pneumonia. It may cost a little more for coal, but this will be offset by the lessened expenditure for drugs.

THE CONTAGION OF LEPROSY. —While there are some good authorities who honestly doubt the contagiousness of this terrible disease, yet there is sufficient danger of contagion to warrant us in emphatically endorsing the remarks of the *New York Sun*, when it says that while there is no real danger for alarm in this matter, yet there is ample reason for caution not to permit leper immigration. Such sadly afflicted persons would not add anything to the welfare of our country, they would, sooner or later, become a burden on the community, while, as we have intimated, they would be not unlikely foci for the dissemination of the disease. Keep them out.

THE HARMONY OF HOME. —If there is to be household harmony an important point is to cultivate a sweet temper. We cannot do without that. Some tempers are like violin strings out of tune; with them who can expect either melody or harmony from the family orchestra! This is specially a young woman's subject; indeed, if our girls are not amiable nobody else can be expected to be. It is to their

kind and gentle words that we must look for an antidote to fretting and ill humor. At home the key note of the day's music is often struck by the first word we hear in the morning and happy is the house where it is always uttered by the smiling lips of good-tempered girls.—*Household*.

COUNCILMAN GATES ON HYGIENE.—Placards are conspicuously hung in every show window in Germantown requesting citizens to "step inside and sign petition to councils for pure water." We have not yet been apprised of the results, but, since the people have demonstrated a sentiment towards sanitary progress, and with a gentleman like the Honorable Jas. R. Gates at the head of Select Councils, we feel no hesitancy in declaring that some good work will be accomplished. For, our worthy 'select' president has so intelligently manifested an interest in the science of hygiene, as to warrant us in asserting that he will co-operate with the people for the enforcement of any movement that will prove itself beneficial to health and longevity.

THE WORLD LEANING TO ECLECTICISM.—Andrew Carnegie, who is certainly a very observant traveller, tells us that very soon we shall be at a loss to find any striking difference in costume or habits throughout the world. Speaking of the Russians, he says that in dress there is a tendency towards the English; in cooking towards the French and towards the American example in political institutions. We are gratified to learn from such a sagacious observer that this tendency to imitate the best that is to be found in each nation is abroad in the world; because, we are, therefore, confident

that it will but require a demonstration of the salutary efficacy of hygiene to cause an absolutely universal acceptance of its doctrines.

A LESSON FROM A HANG-MAN.—From the daily papers, we learn that Berry, the English hang-man is as proud of his calling as was the hang-man in "Barnaby Rudge." He is sociable by nature and likes to talk of his work. While there are few who would care to belong to his "profession," yet there is a valuable lesson to be gleaned from this man. If we would all take the same pleasure in our work and be as anxious to do our allotted tasks to the best of our ability as this singular man; our work, instead of being a burden would become a true pleasure and our happiness and health be increased accordingly.

SO-CALLED POISONOUS UNDERCLOTHING.—An interesting suit for damages is now before our Courts. A certain man bought some flannel underclothing from a dealer, whom he claims guaranteed them to be free from poisonous substances. He now brings suit because he claims that these articles produced sores and eruptions of the skin and made him sick for three months. We can believe that certain dyes in underclothing may produce an irritation of the skin, but we very much doubt whether any of them will cause "sores," and we would feel inclined to look for the cause of such a condition elsewhere than in the under clothing. We must not accept as gospel-truth all that we hear or read, and we must not be too ready to accept explanations that do not explain.

THE ABUSE OF TOBACCO.—It will interest those of our readers who are opposed to the weed, to learn that an international congress was recently held in Paris for the purpose of protesting against the abuse of tobacco. M. Ortolan made the interesting statement that the proportion of nicotine in tobacco is less when the stalks grow close together, and when the leaves are numerous and placed very low upon the trunk. This is the reason, he said, why the German, who smokes more than the Frenchman, poisons himself less. In the former country growing is free, whereas in France it is regulated by the Government, and the number of leaves to the stalk is limited. French tobacco, he said, contains as much as six per cent of nicotine.

THE HAMMOCK AND THE SWING.—

A writer in the *Chicago News* gives the result of an experiment, showing that the instinct of children has in it not only a love for recreation of a choice sort, but a sanitary common sense. A number of swings were suspended at a summer home for children, and near by were swung two dozen hammocks. The latter were almost always full, but the swings rarely were in use. The hammock is the most natural invention to give perfect rest and ease to the whole body, with a delicious sense of motion and activity. Every home should have several hammocks swung under trees, for the use of both adults and children. It will tend greatly to relieve the strain of everyday toil, and to sweeten the intercourse of its members.

DON'T HURRY.—There is only one thing that a person ought to do in a

hurry, and that is to make a firm resolve never to do anything in a hurry. Don't hurry up stairs; don't hurry along the street; don't hurry in eating; don't hurry in any of the various duties of life. Take your time about everything. It is all nonsense for men to think that hurry means business. Look about and see if the really great and successful business men do things in a hurry. Gould, Vanderbilt, Drexel, Jay Cooke and such men are always deliberate and placid; never in a hurry. Such meteoric men as the late Mr. Woerishoffer, of New York, do things in a hurry, and seem, for a little while, as he did, to prosper, but in a short time it is found that such men die in a hurry. It is not the fastest walker but the one with the greatest endurance who finally wins the race. Hurry will not produce material success and it will kill.

PRESIDENTIAL IGNORANCE.—President Harrison is usually regarded as a very wise man, for he has given ample evidence that he is a well-informed man who makes good use of his information. He is also considerable of a sanitarian, for he, in many ways, regulates his life in a most admirably hygienic manner; but there is one point, and a most important one, whereon he displays a lamentable amount of ignorance. President Harrison does not know how to rest, for, it is reported of him that, during the past summer, when he went off to Deer Park for recreation, he more than once took his work along with him. The excuse might be offered by him that the work had to be done. But we would reply that if he were dead, some one else would be obliged to do the work, and we would add that when a man seeks

recreation, he should be practically dead to his work; Senator Quay always is; he knows how to rest.

TOO MUCH STUDY.—It is with regret we read that the hope of the Italian Crown is a very frail one, the Crown Prince being a feeble boy, of affectionate disposition and great intelligence in his studies. In their desire to make him a brilliant scholar and to fit him for his exalted position, his parents have given him too many tutors and his health is broken down by study almost to the verge of consumption. He is very pale and delicate. When will parents learn that, of the two extremes, there is more happiness in this world for the *healthy* ignoramus than for the *educated* invalid. Of course, we should select, as nearly as possible, a happy medium, but if we must go to one or the other extreme, let us select that which will not cause our children, in after life to heap reproaches upon us for our disregard of their physical welfare. Health first; polish afterwards.

DRINK OF A NOTED JUDGE.—Lord Coleridge, Chief Justice of the highest English judicial tribunal, has a celebrated drink, known as the "chief's drink," which is as famous in the law courts as Mr. Gladstone's restorative in the House of Commons. Lord Coleridge's desk is never without the large tumbler holding the mysterious liquid with which he gently moistens his lips throughout the day. All that is positively known about this cool, enticing beverage is that soda water is one of its elements; and as the soda water bottle stood on the Lord Chief Justice's desk recently the cork had the impudence to fly out, causing an ex-

plosion which apparently made Lord Coleridge think that an earthquake was breaking forth beneath the royal palace of justice, rise to the ceiling and descend upon the capacious head of one of the judge's clerks, amid the laughter of the whole court.

THE VENTILATION OF CHURCHES AND SCHOOL HOUSES.—A very common mistake in the ventilation of churches, school houses and public buildings generally is made when those in charge fail to open all the windows immediately after the buildings have been vacated. The exhalations from the lungs and the emanations from the bodies being light will float for a while in the atmosphere before falling to the floor, and if the windows be opened at once so that a current of air crosses the hall many of them will be carried out. If, however, as is usually the case, the windows are not opened for some hours, may be not until the next day, these particles, settling upon the floor, are not carried away, but when the hall is again occupied they are disturbed by the feet, thrown up into the atmosphere and inhaled into the lungs from which they have been exhaled the day before.

WHAT CONSTITUTES REAL BEAUTY.—Mirth, cheerfulness, animation and other expressions of a happy spirit or a vivacious mood are to beauty what fragrance is to the rose—its soul, its subtlest charm. The doll-faced girls who have no "expression" are never anything more than pretty. Beauty is something deeper than color, something finer than regularity of features. Many a woman who lacks the charm of prettiness is seen to be beautiful

when she speaks and smiles. What constitutes beauty is a theme as old as love. It has been the puzzle of poets, the despair of artists. The bias of affection or conformity to an ideal makes nearly all women attractive to somebody. But the one thing which enters into and enhances all beauty is the smile that reflects "sunshine in the heart."—*New York World*.

THE EVIL EFFECTS OF ANGER.—Passion is always full of danger, but when one who has some defect of the heart allows his anger to arise he is in the most imminent danger of dire results. It is well-known that John Hunter, the great English Surgeon, angered by an unjust personal criticism, rose to reply; he was much agitated, and as his lips parted to speak, he fell lifeless to the floor. It is now related that Dr. Bogdanovski, a well-known surgeon in St. Petersburg, died recently while engaged in an operation. He was about to amputate the arm of a patient, and had already begun the operation, when he was angered by the awkwardness of a student who was assisting him, spoke to him sharply, and suddenly fell fainting to the floor. He soon recovered consciousness and was about to proceed with the operation when he fell again and died in a few minutes. The cause of death was heart failure. The moral is obvious.

THE EXAMPLE OF HENRY S. IVES.—The so-called "Napoleon of Finance," Henry S. Ives, may not be an example of business morality or financial sagacity to be held up to emulation by the rising generation, but he certainly does possess one trait that, as sanitarians, we can endorse most heart-

ily, and that is his cheerfulness in adversity.

We are often told that there is no use in "crying over spilled milk," which is but another way of saying that a funereal manner and despondent humor will not better a bad position. We are told that throughout the recent incarceration and trial of Mr. Ives he was always in the best of spirits. While we would not recommend his peculiar methods to ambitious financiers, we would urge upon all that even though they may be in the depths of adversity, despondency will not help them out, while cheerfulness and good humor will not only relieve their health of the strain which their misfortunes have put upon it, but also greatly help them to a renewed start in life.

HOW MUCH SHOULD A CITY PAY ITS HEALTH OFFICER?—The Michigan State Board of Health has recently published a paper by its Secretary, Dr. H. B. Baker, in which he asks the question, how much the average city or village can afford to pay its health officer. He answers this question in this way: Statistics which cannot be questioned prove that in those localities in Michigan where the recommendations of the State Board of Health are carried out about eighty per cent. of the deaths from diphtheria and scarlet fever are prevented by the thorough isolation of all infected persons, and the thorough disinfection of all infected persons, things and places. Statisticians usually value a person in the prime of life as worth to the community about one thousand dollars. Dr. Baker thinks that in a village of fifteen hundred inhabitants a health officer can easily save the lives of two children and one grown person in each

year, and he concludes that such a village can well afford to pay its health officer two thousand dollars for the prevention and restriction of scarlet fever, diphtheria and typhoid fever,—and make money by the transaction.

DISEASE WILL BE A DISGRACE.—A very intelligent lady recently remarked to us that she really felt that it was a disgrace to have a case of Typhoid Fever in her family. Our reply was that the general acceptance of the teachings of hygiene was not yet so universal as to warrant us in quite so strong an assertion, but that the time was rapidly approaching when all zymotic diseases, all disease caused by insanitary conditions, would be regarded as a disgrace because it would evidence disgraceful carelessness. The *Med. Record*, commenting on the epidemic of Diphtheria at Moscow, Ohio, (which we noticed in our last issue) emphatically supports the position we have taken above by saying: "The time will come when an epidemic of disease in a place will be looked upon as a disgrace to the community, as great, if not greater, than would be a series of robberies, or of any other crime."

YOUNG BLAINE'S CARE OF HIS BRIDE.—The newspapers have made the public rather familiar with the fact that Emmons Blaine lately married Miss McCormick, of Chicago, and, if rumor be true, we have every reason to believe that he will make a model husband. In conversation, recently, Mr. Blaine, heard an old lady describe how a friend of hers had caught a severe cold by riding in a carriage, the upholstery of which was full of damp-

ness. Mr. Blaine was about to take Miss McCormick to a reception, and the weather was very damp. This wise and careful young man hies himself off to the livery stable and has hot irons pressed all over the upholstery of the carriage he is about to use. This lesson should not be lost. Damp and wet conveyances are responsible for many cases of rheumatism and pneumonia, and it will require but little time and trouble to dry them out before use.

A CHEMICAL BALLET.—At a banquet which was given at the conclusion of the German Congress of Naturalists and Physicians at Cologne, Dr. Hoffman alluded to the difficulty experienced by students in understanding the constitution of organic compounds and suggested an original method of fixing these in their minds. The audience was then treated to a ballet, in which the *dansueuses* were dressed in different colors to represent the various atoms. At his command, these colored female atoms grouped themselves in various fashions to show the chemical constitution of particular compounds and their reactions. The composition of benzol and the formation of aniline and its derivatives were particularly applauded. The ballet wound up by a representation of the formula of roburite, the new explosive, the *finale* being a formidable explosion.—*Medical Press*.

THE "OLD TIMES" GUSH.—The *New England Farmer* says: "It was those large families of children, those cold houses to live and work in, those damp cellars full of vegetables, which laid so many third and fourth wives in the old cemeteries, to say nothing of

the short-lived first and second partners. When some grumbler tells us of the good old-fashioned families and the smart women of his father's or grand-father's time, we feel like telling him that the bondage of those days was something to shudder at, not to take pride in, and that the women of to-day may lay a good per cent. of the physical disabilities they have to those same smart foremothers. With due respect to his ancestors, if they could be materialized he would find them much less congenial companions than the bright women of to-day, who are planning, hoping and working to have their daughters better than themselves, physically as well as in every other way, and one move nearer to the ideal woman."

THE FIVE STONES OF SUCCESS.—When one, now-a-days, wants to refer to very successful men it is not uncommon to hear Postmaster General Wanamaker referred to as an instance of phenomenal success. In one of our issues last spring we took the ground that much of Mr. Wanamaker's success was traceable to the fact that his life is, and has been, an extremely natural or, in other words (for they mean the same thing) an eminently hygienic one. Whether he was inspired by this article or not, we know not, but, in a recent address to his Sunday School Class, Mr. Wanamaker, after relating the history of the killing of the Philistine giant, Goliath, by David with a sling and stone, said that there were five stones which he thought were necessary for use against the many temptations: Health, education, courage, truthfulness and faith in God. It strikes us as a somewhat significant fact that such a sagacious

man as Mr. Wanamaker should place HEALTH first on the list, and we feel that this remark should not go unnoticed, since health is a boon that it is in the power of nearly every one to procure and preserve for himself.

PATCHING UP OUR SEWERS.—Two hundred and fifty thousand dollars will probably be expended in this city shortly for the reconstruction of some of our worst sewers, and we feel that our authorities might just as well throw this money into the sewers, (literally speaking), for all the good it will do. Heaven knows, we want sewers badly enough, but we want an intelligent system, and we will not get it by spending a little now and a little again, in patchwork style. In most of our large cities there is really no system (to properly use the word) of sewers, these necessary adjuncts to centralization being supplied as they were required and in the manner that seemed best to the one who happened to be in charge of the work at the time. This is, of course, no reflection on the authorities, who usually have done the best they could; but, it is time now for the people to understand that money spent in patch-work is money wasted. We ought to devise a *system* and then devise the means of raising the money to put this system in operation.

GOD MADE THE COUNTRY.—If it be true, as it is usually claimed, that "God made the Country and Man made the City," our next census will demonstrate to us in somewhat startling array the dismal fact that man seems to prefer man's handiwork to that of the Divine Creator. Mr. Robert P. Porter (the Superintendent of the Census) tells us that the popu-

lation of this country is now sixty-five millions, and that of this number fifty millions live in *man's* cities and villages and fifteen millions in *God's* Country.

Now, it seems to us that if the Almighty, in his designs for the universe, had intended that we should live in cities he would have supplied them to us already made rather than that they should spring from the mind of man after it had lost the pristine freshness of the first and earliest of his creatures. Of course, we recognize that cities have "come to stay" and will not waste words against them, but it seems to us that since people have chosen to live in a way not designed for them by nature and since nature resents any such indignity put upon her by visitations of disease, that there is ample reason why those who would so live should avail themselves of all preventive precautions that science can offer to them.

AN EPIDEMIC OF DIPHTHERIA CAUSED BY PIGEONS.—In the *Bulletino Medico* there is a very interesting report of an epidemic of diphtheria which occurred in 1887 at Skiatos, a small island of four thousand inhabitants, situated in the Greek archipelago. The first case was observed by Dr. Paullinis at the commencement of June. The child died on the fourth day of the disease. In a few days seven more children were attacked and five died. The diphtheria rapidly spread through the whole island, and in five months it caused a mortality of 36 out of 125 patients. The sudden appearance of this disease on that island was quite a surprise to Dr. Paullinis, who had not seen a single case of diphtheria during thirty years.

After a careful investigation of its origin he discovered that some days previously to the death of the first child a peasant, living in the neighborhood of the house, had received from Salonica a dozen pigeons. Two were very sick during the voyage and died of diphtheria as soon as they reached the island. A few days afterwards seven more pigeons died of the same disease. The place is situated at the north end of the island, and the doctor's theory is that the north wind, which constantly blows there in summer time, brought the germs of the diphtheria of the pigeons to the nearest houses, and thence it spread among the human beings? and we are inclined to believe in the truth of this theory.

AMERICAN PUBLIC HEALTH ASSOCIATION, BROOKLYN, 1889.—The Seventh Annual Meeting of this Association will be held in the hall of the Brooklyn Institute, Washington and Concord Streets, October 22, 23, 24, 25. Addresses of welcome will be delivered by Hon. Alfred C. Chapin, Mayor, on behalf of the City, and by Alexander Hutchins, M.D., on behalf of the medical profession.

The following topics have been selected for consideration at the meeting:—

I. The Causes and Prevention of Infant Mortality.

II. Railway Sanitation. (a) Heating and ventilation of railway passenger coaches. (b) Water-supply, water-closets, etc. (c) Carrying passengers infected with communicable diseases.

III. Steamship Navigation.

IV. Methods of Scientific Cooking.

V. Yellow Fever. (a) The unprotected avenues through which yellow fever is liable to be brought into the United States. (b) The sanitary requirements necessary to render a town or city proof against an epidemic

of yellow-fever. (c) The course to be taken by local health authorities upon the outbreak of yellow-fever.

VI. The Prevention and Restriction of Tuberculosis in Man.

VII. Methods of Prevention of Diphtheria with results of such Methods.

VIII. How far should Health Authorities be permitted to apply known Preventive Measures for the Control of Diphtheria.

IX. Compulsory Vaccination.

X. Sanitation of Asylums, Prisons, Jails, and other Eleemosynary Institutions.

THE WHEREFORE.

[From the *Boston Med. and Surg. Journal*]

A man of modern science wooed
A maiden of accepting mood,
Who, dreading lest contagion might
Do mischief to her chosen wight,
With sol. bichloride washed her hair
And sponged her limbs and body fair.

She rinsed her mouth with "Listerine,"
And held, her snow-white teeth between,
A pad of antiseptic gauze—
Covering her nose, as well as jaws,—
Which formed a sort of respirator
Between them and her "oscillator."

But this reminds,—I should have told
That these were things he'd taught of old,
With others which I may not tell in
Regard to spots that germs might dwell in.
She was a wise professor's daughter
And practised all which had been taught her.

So this good medicine man, with pride
Clasping his antiseptic bride,—
In disinfected murmur low
Asked "why she loved her doctor so?"
And, softly nestling down, she sighed,
"You're such a dear *old germicide*."

C. V. G.

BEEF EXTRACTS.—We have, more than once, taken occasion to warn the public against the use of the various *preparations*, so to speak of animal food. To formulate our idea, we would say that, in a general way, so far as animal food is concerned, it is our fancy that we will derive the best

and most wholesome nourishment from that which we consume but a comparatively short time after the departure of its own life. Of course, we recognize that the demands and necessities of society do and will require that we shall have hams and dried or smoked beef and the like, but what we believe, as an ideal, is that we would be better off without them. To be plain, we would say that when we eat meat it will be best for us to eat it fresh, while we must be much more severe and entirely unqualified in our condemnation of canned and potted meats. We are led to again refer to this subject by reading that a man in England was recently arrested and fined for driving a dying horse with cruelty. He was taking it to port for transshipment to Antwerp, where it seems they boil down old screws and send the results back to English invalids for beef tea.

Of course, all beef extracts are not so made, but the best of them have but little nourishment when compared with that to be derived from good fresh beef, and it must be admitted that the composition of the majority of such preparations is as much of a mystery as is that of the proverbial "*boarding house hash*."

LOOKING ON THE BRIGHT SIDE.—The following, which we note in *Harper's Bazaar* is so apropos to the remarks that we have elsewhere made on the "Essence of Wisdom" that we reproduce it. It demonstrates that our advice therein is not theoretical "*talk*," for here we have a real, live woman living up to the sentiments therein expressed.

"My boys and I have been shut up together for six weeks," said a little woman the other day, her bright face dimpling with

sunny smiles, showing how sweet and fresh is the quality of youthfulness which makes the matron as captivating in her meridian as the girl must have been in the morning, "Quarantined," she added, "and we've had a siege of it; but the dear lads were never really ill, notwithstanding the dreadful character of the disease which had them in its clutches. Of course we were terribly anxious, and the doctor kept warning that we could not be too careful; and I had such a horror of any infection wafting itself from our doors into the home of somebody else where there were children, that I could not sufficiently multiply precautions; but when all was said, and all the privations and disappointments borne, there were compensations. The boys and I grew so well acquainted! We read several splendid books through, from the first chapter to finish; we studied the New Testament; played games. They told me everything, just as when they were my babies toddling over the floor and coming to mamma with their questions and troubles; and now that it is over I shall always look back with a certain gratitude and pleasure of memory on our six weeks in quarantine."

MIASMATIC DAMS.—The question that is now vitally agitating the people of Allentown (in this State), is a subject of absorbing interest for many other cities and towns. It seems that the recent storms have washed away a portion of the water-works dam and the question is "shall it be rebuilt," some of those interested claiming that owing to the vegetable growth and subsequent decomposition that occurred therein this dammed-up water was a source of ill-health to the city. Now, it is a fact that stagnant water will always render a locality unhealthy, because organic decomposition is favored by it. Hence it would seem to us that in discussing the probable effect of all proposed dams on the future health of a community we must consider whether there is such a current in the stream

that is to be dammed up that when the dam is made the water will not be rendered stagnant.

There is, of course, nothing intrinsically unhealthy in dammed-up water, but if this damming produces stagnation then the water so affected will offer a breeding place for disease germs. The thought has suggested itself to us (and we give it for what it is worth) that if, instead of making the pond square, so to speak, we would make it oval or egg-shaped, placing the dam breast at the point of the oval, the current would be less interfered with, the edges of the pond would be less likely to be marshy and the stagnation of the water would be reduced to the minimum. Let it be firmly impressed upon the mind that it is stagnation that is to be feared and avoided.

TAKING THE BULL BY THE HORNS.
—William T. Davis, the high constable of the Borough of Edwardsville, (in this State) deserves to be the next President of the United States, for he has shown an appreciation of the duty he owes his fellow men, seldom before equalled by public officer of high or low degree. This good and wise man recently arrested the Burgess and the members of the Town Council and took them before Alderman Donohue, who held them in \$500 bail each to appear in court for trial on the charge of maintaining a nuisance in the shape of an extensive pond or swamp of filthy water, which, it was claimed, had caused much disease among residents of the vicinity. "Everybody's business is nobody's business" is the way it is usually put, and so it seems when it comes to the abatement of nuisances prejudicial to health, the authorities who should do the work, as a rule pay

no heed to it. Occasionally they are forcibly reminded of their duty, as in the present instance and the work is done. When the late Dr. E. W. Germer, the first President of our State Board of Health was first appointed Health Officer of Erie, he signalized his entrance into office by causing the arrest of the Mayor of the City, Ex-Congressman Wm. L. Scott and some half dozen more of the richest and most influential citizens of the place on the charge of maintaining nuisances prejudicial to health. At first these mighty gentlemen were mightily indignant, but, upon second thought, recognized the eminent propriety of Dr. Germer's action, as the result of which he (Dr. G.) continued throughout his life-time the Health Officer of Erie, and died, in office, the most thoroughly respected and deeply beloved man in the city. If we but force our authorities to reflect, by some such summary acts as we have here recorded, the result will be a greatly increased interest in the means of preventing disease.

THE TEN COMMANDMENTS of the wife are thus described by an exchange :—

1. Avoid the first quarrel; if he approaches be well prepared, and see to it that you are victorious, as it is of the utmost importance.

2. Do not forget that you have married a man and not a deity, and do not be astonished at his imperfections.

3. Do not constantly annoy him for money, but see to it that you get along with your weekly allowance.

4. If your husband is not possessed of a heart you may rest assured he has a stomach, and that by providing him with well prepared food you can secure his favorable opinion.

5. Now and then, but not too often, allow him to have the last word; it satisfies him and can do you no harm.

6. Besides reading the notices of betrothal and funerals in the papers, also read of the events that transpire at home and abroad. It will surprise and please him that he can talk about such things without going to a saloon.

7. Always be polite to your husband, even in a quarrel; remember that you looked up to him when he was your beau, do not now look down upon him.

8. Occasionally allow him to be better informed than yourself, it will flatter him and it will enure to your advantage when you concede that you are not perfection.

9. Be a good friend to your husband, if he is a wise man; if he is not, make him to be your friend; elevate him to a higher plain but do not descend to his low level.

10. Esteem the relatives of your husband, especially his mother; she loved him long before you did.

DIET FOR ASTHMATICS.—Dr. C. T. Williams, in the *Am. Jour. Med. Sci.*, says that the dietary which suits most asthmatics best is that which limits them to two meat meals, viz., breakfast and lunch or early dinner, and restricts their food for the rest of the day to liquids, with only bread, toast, or biscuits as solids; the great principle being that the asthmatic should retire to bed with gastric digestion quite complete, and thus preclude any pressure upward from flatulent accumulations in the stomach. Where there is much dyspepsia, and especially where flatulency occurs immediately after meals, it is advisable to omit sugar and starch from the dietary and to avoid potatoes. Coffee is generally a suitable beverage, and should be taken at least once a day, black, as it distinctly lessens the spasm without rendering the patient sleepless, whereas tea, though it is a product of the same natural order of plants, acts in a different way and often increases the trouble.

It need hardly be added that all articles of food which are in themselves more or less indigestible, such as pastry, pickles, uncooked vegetables, salads, garlic, and fruit, except when perfectly ripe, and we may add cheese in its various forms, and richly dressed or highly flavored dishes, are to be strictly avoided.

THE TREATMENT OF OBESITY.—Many and varied are the means that have been, from time to time, recommended for the reduction of obesity. No one plan has ever been found to be universally satisfactory. That method which succeeds in one will fail utterly with another. Yet it is oftentimes a very great desideratum that superfluous fat should be removed. A late issue of the *British Medical Journal*, contains an interesting personal sketch, from the pen of Mr. W. Towers-Smith, whose treatment consisted in the use of rump steak, grilled cod, and a gallon of hot water in the twenty-four hours. In the morning he took five grains of bicarbonate of potash. In two weeks the weight had been reduced eighteen pounds, when the amount of meat taken was reduced, as well as the water, and tea and coffee substituted along with toast. At the expiration of six weeks the weight had been reduced thirty-four pounds, when the system was discontinued, with the result that he has returned to his regular diet and there is no tendency to get back into the old condition. A record of forty cases treated successfully in this manner is offered to recommend the method. Personally, he says he has derived great benefit from this treatment, and does not experience oppression in going up stairs, while his duties as a general practi-

tioner, formerly fatiguing and irksome, are now attended to with comparative ease and comfort.

NO ROYAL ROAD TO GOOD DIGESTION.—There is no royal road to health; no short cut, panacea or elixir; health is made up, we might say of an aggregation of proper functions. Neither is there any royal road to good digestion; no drug that will take the place of the proper functions of the stomach. There are drugs that will help to restore the deranged digestion, *help* we say, while nature rights the disorder; but there is no drug or combination of drugs that will or can supplant the natural functions of the stomach.

Those of our readers who are dyspeptic may say that they know all this, and if they do, they write themselves down as very foolish persons for they usually fail to act on this knowledge. Of course, the causes of indigestion are so manifold that it would be impossible to formulate any rules for the general guidance of all dyspeptics, but that we may have a platform upon which to stand we will enunciate certain principles that will be found applicable to a very large percentage of cases of indigestion.

1. Never eat anything that is *fried*.
2. Chew thoroughly and thoroughly mix with the saliva every mouthful of food before passing it into the stomach.
3. What will of necessity follow if you observe No. 2, *i. e.*, *eat slowly*.
4. Walk four or five miles every day; but not immediately after eating.
5. Have the bowels opened every day.
6. Do not do with your stomach what we have, this moment, done with our stove. We poured in too much coal; the burning wood was not able

to digest it, and the life of the stove (the fire) smouldered away. If you pour too much food into your stomach, this organ cannot digest it and the life of your body will be oppressed and depressed thereby.

If you eat sparingly and chew thoroughly you will derive much better nourishment from what you consume than if you cram like an anaconda and "bolt" your food like a Hottentot.

These simple precautions will not cure every case of dyspepsia but they will cure many more than will ever be cured by drugs.

THE FAITH CURE.—While we have comparatively little confidence in the efficacy of curative medicine, by which we mean to say, (what every intelligent physician believes) that drugs have little or no power to *cure* disease, their highest mission being to so regulate and control conditions that nature can work the cure; while we would always prefer the hygienic curative to the drug curative treatment; yet we have no patience with what is now called the "Faith Cure." There are certain disordered conditions wherein a perverted imagination is the chief factor; when, so to speak, a person is sick, because he believes that he is sick; where there is no organic disease, no definite illness, such cases all belonging to the almost limitless class of functional nervous disorders. In such cases the "Faith Cure" is a mighty potency. If a man who is sick because he so believes himself to be, can, through the agency of faith, be made to believe himself well again, for all practical purposes a cure has been effected; and for just such cases we consider the "Faith Cure" a great thing. In times gone-by, these imag-

inary ills were dosed with powerful drugs and great harm thereby done; if, however, such abnormal conditions can be righted without the use of drugs a great step has been gained, and it is in such cases that the "Faith Cure" has wrought seemingly marvellous cures, and it is because of the good it has done in such cases that it has taken the hold it has upon society. It has its uses, but, unfortunately it has been prostituted to purposes utterly beyond its control. Any one who will try to cure a case of Typhoid Fever by endeavoring to make the patient believe that he is not sick, as has been recently done by advocates of the "Faith Cure" system is thoroughly saturated with the essence of assinnity, and should the patient die, should be adjudged guilty of manslaughter or worse. We must recognize, paradoxical as it may seem, that there is a form of imaginary disease, wherein the imagination has so far secured control of the reason, that the disease becomes, to all intents and purposes, real. Here the victim imagines himself sick, and, as a result, he really is sick, and it is in the power of faith to cause him to imagine himself well again, when he will, in reality, be well. There are very few things in this world wholly without good, and the "Faith Cure" is not one of them. Rightly and intelligently used in appropriate cases it is a host for good; but as a panacea, or as a cure for really, materially morbid conditions it is a dangerous delusion and a snare.

AMERICAN PUBLIC HEALTH ASSOCIATION.—*Health Exhibition.*—The American Public Health Association will hold its next Annual Meeting at

Brooklyn, N. Y., October 22, 23, 24 and 25, 1889.

This Association comprises over eight hundred members, all devoted, officially or otherwise, to its declared purposes—the advancement of sanitary science and the promotion of organizations and measures for the practical application of public hygiene. In the furtherance of this purpose it has met annually, during the last sixteen years, in different cities of the United States and Canada, and has in every instance had the effect of greatly stimulating public effort in the promotion of health and measures for its maintenance.

With the hope of still further magnifying this interest and effort, it is the purpose of the Association, through its local committee, at the forthcoming meeting, to provide an EXHIBITION OF EVERYTHING AVAILABLE ADAPTED TO THE PROMOTION OF HEALTH. The exhibits will be classified as follows :—

CLASSIFICATION.

Division I.—The Dwelling.—Class 1. Dwellings: Models and designs for sanitary dwellings.

Class 2. Treatment of the site: Foundations, drainage, drainage tiles, etc.

Class 3. Materials for construction: Bricks, tiles, floors, cements, etc.

Class 4. Heating: Devices and appliances for furnaces, stoves, water and steam heating apparatus.

Class 5. Ventilation.

Class 6. Lighting.

Class 7. Domestic water supply, purification, filters, water fittings, etc.

Class 8. Plumbing: Traps, sinks, water closets, baths, etc.

Class 9. Disposal of waste: Domestic garbage destructors, garbage receptacles, etc.

Class 10. Sanitary furniture, refrigerators, wall paper (non-arsenical), floor coverings, etc.

Division II.—Schools and Education.—Class 11. Plans and models for improved school buildings.

Class 12. Heating, ventilation, lighting.

Class 13. Furniture and fittings.

Class 14. Improved books, printing, etc.

Class 15. Gymnastic apparatus.

Class 16. Works on sanitary topics.

Division III.—Factories and Workshops.—Class 17. Designs and models for improvements in factories and workshops.

Class 18. Life and health-saving devices.

Class 19. Special devices for removing dust and effluvia and preventing injuries from same.

Division IV.—Clothing and Dress.—Class 20. Improved materials and garments, etc.

Division V.—Food.—Class 21. Selected displays of unprepared animal and vegetable substances used as food or in the preparation of food.

Class 22.—Prepared vegetable substances used as food, including canned and prepared, and preserved fruits and vegetables. Prepared cereals, meals, flour, biscuits, bread, etc. Syrups, sugars, etc.

Class 23. Prepared animal substances used as food: Canned, smoked, salted, preserved and prepared animal foods, including honey.

Class 24. The dairy: Products of the dairy.

Class 25. Beverages of all kinds: Alcoholic, non-alcoholic, tea, coffee, cocoa, chocolate, etc.

Class 26. New varieties of food: Food for infants and invalids.

Class 27. Articles and devices used in the preparation of food: Cooking stoves, ranges, etc. Vessels for preserving food, etc.

Class 28. Adulterants and adulteration.

Division VI.—Sanitary Engineering.—Class 29. Plans for sewerage and sewage disposal.

Class 30. Plans for drainage.

Class 31. Plans for water supply, including purification, filtration, etc.

Division VII.—Public Health Administration in Cities and Towns.—Class 32. Treatment of contagious diseases, including plans for hospitals for same.

Class 33. Vital statistics, blanks, etc.

Class 34. Disposal of waste, garbage destructors, odorless apparatus.

Class 35. Antiseptics, disinfectants and disinfection.

Class 36. Reports of local and State boards of health.

Division VIII.—The Laboratory.—Class 37. Instruments of precision in meteorology, thermometers, barometers, hygrometers, etc.

Class 38. General chemical apparatus for health laboratory.

Class 39. Microscopes, etc.

Class 40. Biological apparatus, cultures, etc.

Division IX.—Red Cross Section.

The Exhibition will be held in the HALL AT THE NORTHWEST CORNER OF FULTON AND PINEAPPLE STS., one block from the Brooklyn Institute, where the sessions of the Association will be held, and but three blocks from the bridge.

It will be opened to the public on October 22d, at 1 P. M. and will continue open until December 1st. ADMISSION FREE.

Applications for space may be made to any member of the Committee on Exhibits, accompanied with details as to *name and character of articles proposed, space required, and the name and address of applicant.*

To cover the necessary expenses of the Exhibition each exhibitor will be charged ten dollars, allowing him twenty square feet of floor space, and thirty cents per square foot for additional space, to be paid on the second day of the Exhibition.

All proposals for exhibition and applications for space are subject to the approval of the Committee on Exhibits, and should, therefore, be made as promptly as practicable.

At the close of the Exhibition the Association will award diplomas to exhibitors of specially meritorious articles based upon the judgment of experts.

COMMITTEE ON EXHIBITS.

Col. J. W. Adams, C.E., 153 Congress Street, Brooklyn; Robt. Van Buren, O.E., Department of Public Works, Brooklyn; A. L. Gihon, M.D., U. S. N., U. S. Naval Hospital, Brooklyn; W. C. Otterson, M.D., 144 Pierpont Street, Brooklyn; Jerome Walker, M.D., 8 Seventh Avenue, Brooklyn; F. B. Bailey, M.D., 214 Madison Avenue, Brooklyn; Stephen Smith, M.D., 574 Madison Avenue, New York; Wm. E. Worthen, C.E., 53 Bleecker Street, New York; E. H.

Janes, M.D., 208 W. 42d Street, New York; Elisha Winter, 213 E. 23d Street, New York; W. K. Newton, M.D., Paterson, New Jersey.

A. N. BELL, M.D., *Chairman.*

113A Second Place, Brooklyn.

E. H. BARTLEY, M.D., *Secretary.*

21 Lafayette Avenue, Brooklyn.

J. H. RAYMOND, M.D., 173 Joralemon St., *Chairman of Executive Committee.*

BROOKLYN, N. Y., *Sept. 2, 1889.*

HOW TALLEYRAND, MINISTER OF FRANCE, PASSED HIS DAY.—“The sole depository of the entire tradition of the State,” Talleyrand, even at the age of 80, ate but one square meal in the day—his dinner—and every morning he required the menu of it from his chef. He would rise at 10, dressing himself even after the hands had got rebellious, and half an hour later would have an egg, a fruit, or a slice of bread and butter, or perhaps only two or three cups of chamomile tea before beginning “work.” No coffee, no chocolate, and “China” tea very rarely. He dined at 8 in Paris, at 5 in the country, well and with appetite, taking soup, fish and a meat entrée, which was almost always of knuckle of veal, braised mutton cutlets, or a fowl. He would sometimes have a slice off a joint; and he liked eggs and custards, but rarely touched dessert. In the drawing room he would himself fill up a large cup with lumps of sugar and then the maitre d’hotel—Careme, no less—would add the coffee. Then came forty winks, and afterward he would play whist for high stakes. His senile eyelids were so swollen that it was a vast effort to open them to any width, and so he often let them close and “slept” in company that bored him. He still continued to call up a secretary at night and dictate to him through the closed bed-curtains.—*Chicago Mail.*

STATE BOARD OF HEALTH

AND

VITAL STATISTICS,

OF THE

COMMONWEALTH OF PENNSYLVANIA.

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J. F. EDWARDS, M. D., of Philadelphia.

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HOWARD MURPHY, C. E., of Philadelphia.

GEORGE G. GROFF, M. D., of Lewisburg.

S. T. DAVIS, M. D., of Lancaster.

BENJAMIN LEE, M. D., of Philadelphia.

PLACE OF MEETING,

Supreme Court Room, State Capitol,
Harrisburg, unless otherwise ordered.

TIME OF MEETING,

Second Wednesday in May, July and Nov.

EXECUTIVE COMMITTEE,

PEMBERTON DUDLEY, M. D., Chairman.

HOWARD MURPHY, C. E.

JOSEPH F. EDWARDS, M. D.

BENJAMIN LEE, M. D., Secretary.

Place of Meeting,

(Until otherwise ordered).

Executive Office, 1532 Pine St., Philad'a.

*Time of Meeting,*Third Wednesday in January, April, July
and October.*Secretary's Address,*

1532 Pine Street, Philadelphia.

Bureau of Registration and Vital Statistics.

Department of Internal Affairs,

State Capitol, Harrisburg.

*State Superintendent of Registration of
Vital Statistics.*

BENJAMIN LEE, M. D.

SPECIAL REPORT.

STATE BOARD OF HEALTH AT
JOHNSTOWN.*Reports of Medical Inspectors Matthews and
Wagoner.*

JOHNSTOWN, PA., September 27, 1889.

DR. BENJAMIN LEE, Secretary State
Board of Health.DEAR SIR :—I have the honor to submit
the following outline of work accomplished
by the State Board of Health forces in the
Conemaugh Valley since June 3d, 1889.As stated in my report of July 9th, Johns-
town and contiguous territory was divided
into twelve districts, and Deputy Medical
Inspectors commissioned for each district,
to assume the direction of the work and to
report daily the condition encountered and
work accomplished. The task assigned
these Inspectors was a most difficult one to
perform. Wrecked houses and immense
masses of debris were piled many feet high,
and containing thousands of dead bodies
and carcasses. The greater part of the ter-
ritory was covered in this manner and points
could not be reached without exhaustive
climbing, and disinfectants were distributed
and carcasses and decaying matter destroyed
with great difficulty. Everything was in a
state of confusion, means of communication
entirely wanting, consequently the records
of the first two week's work are very im-
perfect.As the streets were opened, and some sys-
tem established, the districts were enlarged
and the number of inspectors decreased.
As the work progressed and the unsanitary
conditions improved, the number of Inspec-
tors was still further reduced.These Inspectors performed the work in an
intelligent and efficient manner, making
house to house inspections, examining care-
fully the existing conditions of houses, cel-
lars, privies, yards, etc., and encouraging
and advising the occupants how to protect
their health. The people at once acted
upon this important advice and did what
they could to render their places of abode free
from the dangers that attend an inundation.
They labored zealously to remove from their
premises every vestige of the slime that the
cruel flood inflicted upon them. But
thousands of people lost their all and were

perfectly helpless, and had to be assisted in this work. It was necessary that prompt measures be taken to have cellars cleaned where people were compelled to remain, to provide water closets and remove all decaying matter.

The forces of the State Board of Health were directed to this needful work and pushed with all possible vigor. At this point it seems to be proper to speak of the important work performed by the State Board of Health forces, and to portray to some extent its character. No pen has yet fully described the condition that existed the next day after the waters from South Fork Lake had swept the Valley. The pen never will picture the desolation that existed or tell of the difficulties that confronted the inhabitants of the stricken Valley. The homes that were not swept away were left in the most unsanitary condition imaginable. The flood in many localities reached a height of thirty to ninety feet. This water contained or was heavily charged with debris and every kind of filth, and whatever this water touched it contaminated. As a result every house in the flooded district was filled to the second floor in most cases, with most offensive matter. In many cases dead animals were found in parlors and scores of dead horses were removed from dwellings and business stands. Everything was covered with mud, there was not a place where the flood touched that man could lay his head with safety.

Thousands of workmen were engaged clearing away the great masses of wreckage and opening the streets, but the great question of rendering the valley a fit place for people to dwell was left for the Board to solve.

The sanitary forces first directed their efforts to recover dead bodies, destroying animal and vegetable matter, and building public water closets. It next turned its attention to privy vaults and cellars. Thousands of people were not able to clean their cellars, and to protect the public health and provide a place for people to live, our forces cleaned a number of hundred cellars and in some cases the first floor. In many of the houses over the cellars were sick people, and it was considered of great importance to have these cellars cleaned at once. They could not wait for other forces, it was often

a matter of life or death. The people left had suffered greatly by exposure and exhaustion and there was sickness to an alarming extent. It is a remarkable fact that the number of cases of sickness decreased as the houses and surroundings were cleaned and disinfected.

About seventy-five houses, cellars of same, yards, and water closets were cleaned by our forces, and not only cleaned but thoroughly disinfected. Besides this more than two hundred cellars have been cleaned by our little force. Since July 8th, Capt. Hamilton's forces have cleaned seven hundred cellars. At this time we do not have the records of what Gen. Hastings did, but his forces probably cleaned three hundred cellars. Making in all about one thousand cellars cleaned by forces not directly under the control of the State Board of Health.

I have carefully inspected the whole district many times, and have examined every cellar that has been cleaned as well as those that have not as yet been cleaned. From personal knowledge I should judge there are left about three hundred cellars which are in a bad sanitary condition and should be cleaned.

In the matter of privies an important work has been accomplished. A special corps of workmen was detailed for the purpose of erecting public water closets and affording facilities of this nature in the whole territory. Seventy-five water closets have been erected by our force. There are including twenty-five erected by other forces, one hundred water closets. These have all been disinfected daily. As these closets served their time and purpose they were removed, the vaults excavated and disinfected, and refilled with clean earth. At present there are in existence twenty-five water closets and they are daily disinfected.

Bromine and Carbolic Acid have been the principal disinfectants employed for this purpose. Experience having taught us that these are the most effective disinfectants for use in water closets.

The morgue has been under the direct control of the Board since July 8th.

During this period the average number of bodies recovered has been about one a day. The highest number found in any one day was four. In the last twenty-four hours four bodies have been

found where the State forces have been cleaning cellars. Up to date the best official records give the total number of dead recovered at very near three thousand.

The total number of carcasses destroyed by all the forces cannot be given at this time. So far as my knowledge goes I think there were at least one thousand horses cremated to say nothing about the number of cows and smaller animals destroyed in the same manner. Yesterday there was a mule found in a cellar but this now is not a common occurrence.

The health of the people of Johnstown has been exceedingly good, and at the present time less sickness prevails than at any previous time since that fatal afternoon of May 31st, 1889.

Owing to the imperfect records of the earlier days no complete and exact figures can be given regarding the amount of disinfectants shipped here. In many cases disinfectants were unloaded from the cars and distributed in different places without any account being rendered to our department.

The figures that are given below are only such as we have personal knowledge of.

4000 barrels quick lime.
500 barrels chloride of lime.
1700 bottles bromine.
110 barrels Bullens.
100 tons of copperas.
100 gallons carbolic acid.
3 carboys muriatic acid.
40 gallons nitric acid.
180 barrels rosin.
200 " pine tar.
73 " pitch.
5 " liquid phenile.
15 " sanitas.
3 " phenique.
100 kegs Utopia.
10 carboys embalming fluid.
720 bottles sodium hypochlorides.
700 bottles Platt's chlorides.
116 pounds corrosive sublimate.
100 Werthler's disinfectants.
50 bottles P. R. R. disinfectants.
100 bottles purity.
5 packages Sanitaline.
100 bottles bromo chloralum.

A cargo of Quibble's disinfectants valued at \$2500 and donated by Quibble Brothers, England.

Besides the above enumerated disinfect-

ants, every disinfectant known and those not known and without name have made their appearance, and agents representing the same, have besought and implored us to give them certificates certifying to their germicide and deodorizing properties. The distribution of disinfectants was conducted with proper system. At first stations were established and placards placed throughout the valley informing the people that they would be furnished with disinfectants without cost. The man in charge of these disinfecting stations carefully instructed the people in the use of whatever was given them. In connection with the distribution of disinfectants Health bulletins were published from time to time, giving an exact statement of the condition of health to allay any fears of an epidemic of disease. Circulars were also distributed telling the people how to clean up and to properly live in this emergency. A large amount of official pamphlets pertaining to the public health and giving valuable information on the care of infants, and the treatment of infectious and contagious diseases were furnished. There was distributed to the people more than twenty-five thousand pages of printed matter.

The force under my direction at no time numbered more than 285 men including inspectors, clerks, cooks, and messengers.

The present force consists of the following: Chief medical inspector, chief clerk, messenger, foreman, five laborers, one two-horse team, two carts, and one saddle horse.

The average cost of maintaining this force is thirty dollars a day.

The laboring force is now employed in collecting and destroying garbage, removing all decaying animal and vegetable matter removing water closets and excavating the vaults and disinfecting the same. Disinfecting all public water closets, abating various nuisances as they arise, distributing disinfectants to the various wards of Johnstown and vicinity. The street sprinkler is used whenever the streets are in a dusty condition. Quibble's disinfectant is largely used in the sprinkler.

Respectfully submitted,

W. E. MATTHEWS, M.D.

Inspector.

JOHNSTOWN, PA., Sept. 25, 1889.

DR. BENJAMIN LEE, Secretary State Board of Health.

Dear Sir:—On the 8th of June, 1889, I was appointed a Deputy Medical Inspector of the State Board of Health by Dr. G. G. Groff, the member of the Board in charge of the sanitary work made necessary by the disastrous flood which swept the Conemaugh valley on May 31st, 1889.

The district assigned to me comprised the 5th and 6th wards of Johnstown borough and Grubbtown borough. This territory lies for one mile on the south side of Stony creek. It is a somewhat narrow strip of bottom land which ends abruptly at the sloping base of Kernville hill. Before the flood it was compactly built up, with substantial dwelling houses which sheltered 4000 prosperous and happy people.

While this section of the valley was outside the terrific current that swept down the Conemaugh river, it was traversed by the great return current which was deflected backward by the P. R. R. Stone Bridge. This return current carried with it an immense burden of debris from all parts of the flooded district and deposited it among the wrecked houses of Kernville. Twenty squares of the south side were under water. On Morris street, at Joseph Morgan, Jr.'s residence, the water was 19 ft. 3 in. deep. After the waters subsided this extensive district was covered with a compact mass of debris, under which lay scores of dead, in the slum and filth that fell from the burdened waters.

During the week preceding the establishment of the District office of the State Board of Health hundreds of laborers were employed clearing away and burning the debris. Many bodies were taken out of the wreck and prepared for burial at the corner of South and Napoleon streets. No morgue had been established, and these last sad duties were performed in the open air and in full view of the excited people. One of the first acts of the office was the opening of a morgue in a damaged house, where the dead were cared for in a decent and orderly manner away from the gaze of the curious. One hundred and eighty-two bodies were prepared for burial in this district. The district was liberally supplied with disinfectants and everything that could assist in pushing forward the sanitary work.

The force of laborers assigned to me, under the intelligent direction of Drs. Graham,

McGrew, Phillips and Mr. Knode, travelled back and forth over the wreck, seeking out the dead animals and burning them, and scattering disinfectants over all the masses of decomposing organic matter. These gentlemen being volunteers were soon compelled to relinquish their duties, but in leaving they took with them the respect and gratitude of all who were benefitted by their labors.

A very large proportion of the survivors sought refuge among the residents on the high ground above Napoleon and South Sts. These houses became very much crowded, and as all of the wretched people brought with them some flood-stained articles from the general ruin, these places soon became permeated with the effluvia of the soiled goods. Canvassers were sent to each house to ascertain the number of people occupying it, the condition of their health, the condition of the house and its surroundings, and all facts bearing upon the health and comfort of the people. Directions were given in regard to the disposal of garbage, cleanliness about the house and yards, and all were invited to call at the office for disinfectants, where instructions were given as to their use.

Large quantities of disinfectants were taken away by the people and used, and still larger quantities were distributed by the office, from house to house at regular intervals. During the entire time the office was open, one gang of laborers under the efficient direction of Carl Wakefield was employed in sprinkling disinfectants over the entire district. Fifteen supply stations were established, and from these they worked so that they covered the entire district twice each week. A gang was also detailed to gather up and burn the bedding, garments, and carpets which had been ruined by the water and were thickly scattered throughout the entire wreck. An immense quantity of this material was destroyed. Each day's work averaged twelve wagon loads.

I had occasion to protest against the contractors depositing the mud and filth taken from the streets, on the bank of the river, to narrow its channel, obstruct the flow of the water and clog up the outlets of the sewers. I advised that this material be deposited on a low, marshy place near the hill where the river had little or no bank, and where it

would be useful in protecting the district from being flooded in times of high water. My efforts in this direction, during the time the greatest quantity of mud was removed, were without avail, although repeated several times. A number of men were kept on the banks to disinfect this material as it was dumped. The people soon commenced to clean out their cellars and to deposit the filth on the streets and alleys. At first it did not seem to be the policy of the Board to remove these masses but to leave them for the contractors. When the contractor's men had worked over a place they would not return to clean up any new deposits, and as the people cleaned their cellars when they saw fit, it was not long before the streets had numerous piles of the most offensive mud scattered over them. It soon became a necessity for sanitary reasons to remove these deposits. It was my judgment that the Board should not have waited for the impoverished people to clean out their own cellars, but having an anxious care for the people's health under such calamitous circumstances, should have undertaken this important work at once. It was not long, however, until our force was allowed to remove the filth when deposited on the streets, and in some cases to clean out exceptionally filthy cellars. This formed a very important part of the work done on this side. I desire to say that none of this material removed under my supervision was deposited on the contracted banks of the river, but was hauled to the swamp where it could not add to the future danger of the residents of the South Side.

Up to June 28th there was a force of from forty to fifty men employed in the district doing sanitary work, together with the necessary teams. On that date the force was reduced one-half only to be doubled on July 9th.

On the latter date Dr. Lee allowed the force to be increased for the purpose of cleaning several squares which had not been touched by the contractors.

With a force averaging fifty-five men, five teams and ten carts this work was continued with excellent results together with the regular sanitary work.

After two weeks it was again deemed expedient to reduce the force and confine our work to disinfecting, and the removal of

very offensive deposits. This work was done by a force of thirty men, until on August 10th it was decided that the necessity for special sanitary work no longer existed and the men were discharged. There were, however, three laborers retained to scatter disinfectants, but on August 24th they passed from under my supervision by reason of the discontinuance of my commission. I can safely say that during these ten weeks a very large amount of absolutely necessary sanitary work was done in this district. Upwards of fifty dead animals were destroyed, some of them with great difficulty on account of their position in the wreck. Fifteen stores, meat markets and slaughter-houses were cleaned out and the decomposing contents destroyed. After the streets were cleaned out by the contractors they were kept so by our force. Many of the alleys were cleaned first by our men and all were kept clean by them; disinfectants were scattered with regularity and system, house to house canvasses were frequently made to ascertain the condition of the people. A constant effort was made to do everything in the line of sanitary work that ought to have been done.

With the concentration of 2500 people into 380 houses, all subjected to intense mental strain by reason of the calamity, and the radical changes in their habits of life, it is very gratifying to know that during the continuance of the Board's operations not a case of infectious disease developed in the district which could be attributed to bad sanitary conditions.

For this very gratifying result the citizens of the South Side have to thank the members of the State Board of Health, and particularly its executive officer, for the broad, liberal and scientific manner with which the calamity was viewed which rendered them helpless, and for the prompt action by which their stricken households were protected from the horrors of disease. As the misfortunes of the community were sudden and overwhelming in character, so was the sanitary relief prompt, energetic and thoroughly efficient.

The records of the central office show the quantity of disinfectants sent in to this district. I can only assure you that all of it was used with care.

I feel under very great personal obligation to you, for the aid and advice given me

while I was discharging the duties assigned to me. Whatever success has resulted from my work is due entirely to the generous manner in which you furnished the means to work with.

Very respectfully submitted,
GEO. W. WAGONER, M.D.

A SPECIAL MEETING OF THE STATE BOARD OF HEALTH AT JOHNS- TOWN.

A Special Meeting of the State Board of Health of Pennsylvania was held at the temporary office of the Board in Johnstown at 10.30 A. M., on Friday, Sept. 27th, 1889.

The following members were present during the session, *viz.* :

Dr. J. F. Edwards, Dr. P. Dudley, Dr. G. G. Groff, Dr. Fenj. Lee, Secretary.

On motion Dr. J. F. Edwards was called to the chair.

A recess was immediately taken, and the members of the Board in company with Captain George C. Hamilton, Chief Engineer, and W. E. Matthews, M.D., Chief Deputy Medical Inspector, made an inspection of the entire district. The members then re-assembled at the office of the Board at 4 o'clock P. M.

The Secretary stated the reasons for the call of the special meeting, which were :—

To decide upon the sanitary work still remaining to be done in the Conemaugh Valley, and determine the time at which the special sanitary supervision of the flooded regions may with safety be discontinued, as follows :—

The special object for which this meeting has been called, as announced on the notice, is to give the Board an opportunity of inspecting the results of the work done by the Secretary in abating the nuisance existing at Johnstown, by direction of the Board, and to give an authoritative declaration of the length of time still necessary to complete the work and of the date at which the declaration of nuisance may be removed.

It will be observed that the Board will not be called upon to pronounce Johnstown "in good sanitary condition," as seems to be the general impression. There are few cities in the State of which this could be said.

What the Board is required to decide is, when the conditions no longer exist which rendered Johnstown and the adjacent bo-

roughs in the Conemaugh Valley a menace to the health of their own citizens and of other portions of the State, to such an extent as to warrant the interference of the State in the absence of local health authorities, and, in view of the absolute inability of the citizens themselves to remove them. As an aid to arrival at this decision the Secretary would call attention to statements contained in Health Bulletin, No. 8, issued Sept. 16, 1889, which read as follows :—

"The tendency to disturbances of the bow-
"els noted in the last bulletin, has happily
"disappeared. In the meantime, typhoid
"fever, originating at a farm house about
"two miles back in the country, has made
"its way first into the village of Moxham,
"which escaped the flood, and thence into
"the town. A spring and pump, to which
"several of the earliest cases appeared tracea-
"ble, and to which the entire neighborhood
"resorted in preference to using hydrant
"water, were condemned by the Board and
"the use of their waters forbidden. The
"number of cases has been considerable,
"although not large as compared with that
"of those occurring in other towns at the
"same time. The type of the fever has been
"mild, and the mortality very slight. The
"reports of the past week show that its preva-
"lence is decidedly decreasing. This forms
"at present the only exception to the gen-
"eral good health of the community, which
"the Board has every reason to anticipate
"will continue if ordinary sanitary precau-
"tions are observed."

The Secretary then presented a résumé of work done in and about Johnstown, and in the streams, as contained in the reports of Dr. W. E. Matthews, Chief Deputy Medical Inspector, and Dr. G. W. Wagoner, Deputy Medical Inspector for the South Side, showing in brief outline the nature and extent of the sanitary work, as prosecuted by the Board under their supervision.

The Secretary also asked attention to the proposed action of the Relief Commission in regard to the removal of the unrecognized dead, which is as follows :—

The Committee on removing and burying the unidentified dead consists of J. B. Kremer, chairman, Herman Baumer, James McMillen, James M. Shumaker and John Henderson. A meeting of the committee was held at Secretary's Kremer's headquarters,

at Camp Hamilton, last night, and steps were taken to have the work of removing the dead done as quickly as possible. Mr. John Henderson was given immediate charge of the removal and other members of the committee were given other portions of the work to attend to.

Mr. Herman Baumer, a member of the committee had waited on the Secretary in order to obtain the permission of the Board for the removal above referred to, and for instructions as to the precautions necessary to be observed in its accomplishment.

The report of the Secretary, including that of Drs. Matthews and Wagoner were accepted.

The Secretary then offered the following resolutions:—

Resolved, That the conditions which led to the declaration of the existence of a nuisance prejudicial to the public health in Johnstown and the Conemaugh Valley, in consequence of the flood of May 31, have been so far removed that it will be safe for the State to cease its sanitary operations in this district on the 30th day of September, 1889, and that the Board will therefore withdraw its special supervision of this district on that date.

Resolved, That in view of the possibility of the occurrence of disease on the return of hot weather in consequence of the large deposits of organic matter left by the flood, it is of the utmost importance that the local authorities should continue the employment of all ordinary sanitary precautions, and, further, that in order to accomplish this work in the most efficient manner the Board recommend that the municipalities of Johnstown and the neighboring boroughs unite in the establishment of a Board of Health of the Conemaugh Valley, which shall have charge of the sanitary interests of the entire region.

The resolutions were adopted unanimously.

On motion permission was granted to the committee on removing and burying the unidentified dead to proceed with this work in accordance with the regulations of the Board, and the Secretary was instructed to formulate such special provisions as would meet the exigencies of the case.

The Board then adjourned.

TESTING THE EFFICACY OF TRAPS.—“Is there any way that we can test the traps in the waste pipes from washstands in our bedrooms, to know whether they are protecting us from sewer gas. If there is any simple way of doing this, I think you would do many of your readers a favor by publishing it in the next issue.” (?)

The above query, sent to us by a subscriber, we would answer by saying that while the only way to be absolutely sure of the efficient working of your plumbing is to have it examined by a competent expert, yet the following simple device may be tried. If white paper be pasted over the outlets from the basin and if it be discolored the presumption is that sewer gas is finding its way back.

THE CONVEYANCE OF BOILS.—“A Crop of Boils,” though perhaps oftenest propagated by a common cause in the constitution, it is said may also be insured by careless conveyance of the discharges to the neighboring or distant parts of the body. Strict cleanliness in dressing will obviate any possible danger of this kind.

BOILED EGGS.—To boil eggs so that they can be most easily digested, bring some water to the boiling point, drop the eggs in, and remove the vessel from the fire. Allow to stand five minutes, and when served the whites will be found cooked, but as soft as the yolk.

AN INSURMOUNTABLE BARRIER.—The pestilence that stalketh at noon-day has done no stalking as yet in the Johnstown district. Medical science and sanitary vigilance are putting up the bars against any such stalking matches.—*The Press*.

THE ANNALS OF HYGIENE.

VOL. IV.

PHILADELPHIA, NOVEMBER 1, 1889.

No. 11.

COMMUNICATIONS.

THE ART OF COOKING*.

BY EDWARD ATKINSON, I.L.D.,
Of Boston, Mass.

I will challenge attention and discussion by first submitting some very positive and dogmatic statements, subsequently sustaining them by such proofs as I have to offer :

1. Special apparatus for boiling and frying has been adequately and suitably developed for the use of those who can afford these somewhat wasteful methods of preparing food, yet excellent when skillfully practiced.

2. The ordinary methods of frying are utterly bad and wasteful.

3. Bread may be baked suitably in a brick oven, and also economically, when the work is done upon a large scale.

4. It is very difficult to bake bread in a suitable way in the common iron stove or range ; for this, among other reasons, most of the bread consumed in this country is very bad, although we have the greatest abundance of the best material.

5. Meats may be well roasted in a costly manner before an open fire.

6. Aside from the exceptional appa-

ratus or methods named, substantially all the modern cooking stoves and ranges are wasteful and more or less unsuitable for use. All the ordinary methods of quick baking, roasting and boiling are bad ; and, finally, almost the whole of the coal or oil used in cooking is wasted.

7. The smell of cooking in the ordinary way gives evidence of waste of flavor as well as a waste of nutritious properties ; and in most cases the unpleasant smell also gives evidence that the food is being converted into an unwholesome condition, conducive to indigestion and dyspepsia.

8. Nine-tenths of the time devoted to watching the process of cooking is wasted ; and the heat and discomfort of the room in which the cooking is done are evidence of worse than waste.

9. The warming of the room or house with the apparatus used for cooking is inconsistent with the best method of cooking and might be compassed at much less cost if the process of cooking were separated from the process of warming the room or dwelling.

10. No fuel which cannot be wholly consumed is fit to use in the process of cooking, and any chimney which creates a draught upon the fuel when in the process of combustion, like the ordinary chimney of a house, is worse than useless, since it wastes the greater

* Abstract of a paper read before The American Public Health Association, at Brooklyn.

part of the heat generated from the fuel.

The true science of cooking consists in the regulated and controlled application of heat by which flavors are developed and the work of conversion is accomplished. For this purpose a quantity of fuel is required which is almost absurdly small compared to the quantity commonly used.

Compare the ordinary method of using fuel for cooking with the scientific use of fuel for the development of power in the steam engine. The sheet of lightly sized linen paper, abstracted from the unused part of an old ledger on which I am now writing the first draught of this essay, measures 13 inches by 9 inches equal to 117 square inches, and weighs half an ounce. In solid form it measures half a cubic inch. If consumed under the boiler of the modern marine steam engine such as is used in the freight steamers that carry our wheat to England, two sheets of this paper in a solid form would be equal to 71 per cent. of the calorific value of a cube of bituminous coal of the same size, and would drive a ton of wheat and its proportion of the steamship 14-10 miles on the way from the producer to the consumer at the present standard of power developed from coal. Yet not over 12 per cent. of the actual power of the heat which this scrap of paper will yield would even then be actually converted into work. A cube of pure wood pulp of the same size will do the same work. On the other hand, wood pulp until ignited is the best available non-conductor of heat. I therefore build my ovens in greater part of wood pulp prepared so as not to ignite at any degree of heat which is necessary for cooking; but even in my oven it re-

quires one quart of oil, measuring a fraction under fifty-eight cubic inches, to cook fifty to sixty pounds of bread, meat and vegetables in four successive charges occupying two hours each. Compared with the application of heat to the development of power, even my oven must be utterly condemned as wasteful of fuel; but compare my quart of oil with the hodfuls of coal that would be required to cook sixty pounds of food in the common range or stove, and then what is the verdict? I now venture to submit the data of a dinner prepared by myself, but little out of the usual course, as an example of the common practice in my own family, and of what may be done substantially with one lamp. The dinner was provided for my own family of seven persons, with five guests, and it also sufficed for four servants—sixteen in all—with something left over. My Summer kitchen is fitted with a cooking stove, as it is more convenient to use the top of the stove, heated with hard wood chips, for boiling water, heating the soup and boiling potatoes, than it is to use a kerosene oil stove of the common kind; on this stove the soup made the day before in the Aladdin cooker was reheated, the potatoes were boiled and the hot water was provided. The dinner cooked in the Aladdin oven consisted of three to four pounds of fresh blue fish, just caught, cooked in imitation of broiling, one hour; six to seven pounds leg and loin of lamb, roasted one and three-fourths hours; three tame ducks, weighing about seven pounds, roasted one hour; squash cooked in its own juice, with but very little water, one and three-fourths hours; stuffed tomatoes cooked three-quarters of an hour; a large apple souffle pudding baked

one hour. The oven having been previously heated one hour, the lamb and the squash were first put in ; later the fish was added ; while these were being served the ducks and the pudding were being cooked. The use of the lamp for the whole service was four hours ; the oil consumed, one pint, cost less than two cents ; the cook's estimate of the coal which would have been required for the dinner had it been cooked in the large stove which has been used in other years, one and a half to two ordinary hodfuls. The preparation of the coffee berry is the most familiar example of the development of its properties by the right application of heat. If the berry is dried, ground and made into an infusion without being roasted, no true or drinkable coffee can be made from it. If overheated and burned, the infusion is acrid and unwholesome. But when the berry is carefully roasted and ground, the infusion makes true coffee. The flavor and other properties are the actual product of the heat, when scientifically applied. The flavor of the peanut is developed in the same way. In the treatment of grain, none yields so great a difference in flavor, according to the method of cooking, as the meal of maize or Indian corn, but I find the wheaten bread, whether made of whole or of bolted flour, yields a much finer flavor when baked two or three hours in my pulp oven at 250 to 350 degrees Fahr. than when quickly baked in a common stove or range in one hour at an unknown but admittedly much higher degree of heat. The flavors of the white kinds of fish, such as cod, haddock, flounder, scup and the like, which are much impaired by the ordinary methods of cooking, are very

finely developed when slowly cooked in my oven ; and, lastly, all kinds of meat and poultry develop their respective flavors in the most appetizing manner when roasted in my pulp oven at such low degrees of heat as not to give off any smell or to dissociate any of the volatile elements of the juices or fats, while for game nothing can equal it. Quail and partridge come out rich, juicy and of almost too full a flavor. My Aladdin ovens, so-called, are adapted to methods of cooking corresponding to broiling, roasting, baking and braising ; but they can also be used for boiling and simmering. My Aladdin cooker, so-called, in which the heat is conveyed through water, is devoted wholly to boiling, stewing and simmering, especially the latter. I neither attempt nor desire to fry anything in either kind of apparatus. About nine-tenths of all the cooking of my somewhat large family has been done with this apparatus for nearly two years, and I also have an office lunch room for the use of about twenty employees, in which no other apparatus is or can be used. My Summer kitchen at my seaside house is fitted with a grill which is very seldom used ; it proves to be the most convenient to use the cooking stove, heated with hard wood chips, for boiling the water for tea and for occasional frying. My Winter kitchen is a large one, and it depends upon the range for warming it. The range, therefore, continues to be used to some extent for cooking, mainly for preparing breakfast, but I contemplate substituting a special stove without any oven, which will heat the room with much less coal, the top of the stove being fitted for cooking in the ordinary way. Neither the oven of

the stove in Summer nor of the range in Winter are now used for cooking; therefore, the kitchen is never overheated and the food is never spoiled. We have occasionally failed to cook a large joint of meat for a sufficient time, but we have never spoiled a dish in the process of cooking since the pulp or jacketed oven was adopted. What, then, are the simple principles of the science of cooking? I think they may be stated in a few very plain terms:

1. The heat should be derived from fuel which can be wholly consumed or wholly converted into the products of complete combustion without any chimney except that of the lamp or burner. The fault with coal, especially anthracite, is that it is not evenly or fully consumed; hence the need of a chimney to take away the gases developed and not wholly consumed; but the chimney also carries off the greater part of the heat. It is very evident that the crude combustion of coal and the direct application of the heat generated will ere long give way to more scientific methods of consuming the gaseous products and of deriving the heat from the final combustion of the gaseous products in all arts. In the matter of cooking, kerosene oil burned in any one of the types of lamp which have a central duct to convey oxygen from below to the inner side of a circular wick, when properly trimmed and served with well distilled oil, gives substantially perfect combustion. The same may be said of illuminating gas when used in one of the burners of the Bunsen type which supply an excess of oxygen and yield the blue flame. The combustion of oil and of gas can be brought under absolute control by gauging the

size of wick or burner to the work to be done.

2. The oven in which the food is to be subjected to this measurable and controllable source of heat must be so constructed that the heat imparted to it may be entrapped and accumulated up to a certain measure or degree and then maintained at that temperature without substantial variation until the work is done. This can be done by jacketing the oven in a suitable way with material which is incombustible and also a non-conductor of heat.

3. There should be no direct communication between the true oven or receptacle in which the food is placed and the source of heat, lest the products of incomplete combustion should sometimes taint the food, and lest the food should be exposed to being in places burned or scorched.

These three conditions are all accomplished in the two somewhat crude and probably incomplete inventions which I have named the Aladdin cooker and the Aladdin oven, in both of which the heat derived from common lamps, such as are used for lighting, may be stored or accumulated so as to do the work of cooking in a very perfect manner. In the cooker the heat is imparted to water in an attachment to a metal lined wooden box corresponding to the water back of the common range or stove, and the work is done by the contact of the hot water with the outside of the porcelain vessels in which the food is placed, or by the steam generated when the water is heated to the boiling point. In the oven a column of heated air is carried from the chimney of the lamp to the inside of an outer oven made chiefly of prepared wood pulp, but outside of the inner sheet iron or metallic oven in

which the food is placed, which inner oven is separately ventilated. Next; people must be persuaded that a better and more nutritious breakfast can be made ready to eat, as soon as the family are out of bed, by putting meat stews, oat-meal, brown bread and many kinds of puddings, into the cooker, and simmering all night by the use of a single safe lamp, than in any other way. People must be taught that the dinner can be put into the oven when both husband and wife go to the mill to work, and so treated that it may be found perfectly cooked at noon without requiring any attention in the interval. People must be taught that the best of bread, raised with good yeast, can be mixed and kneaded between 12.30 and 1 P. M., placed in a bread raiser, which will raise it ready for the oven at 6 or 7 P. M., and that this bread may be perfectly baked in two hours by the heat of the evening lamp, which at the same time serves to give light for reading or sewing. All this can be accomplished with my crude apparatus. In a family of five adults, or of four adults and two children 10 or under, making an average family of five persons, in which one-half the income is spent for food and fuel, 25 cents a day per adult being spent for food, the corresponding average expenditure per adult:—

For clothing will be 7 to 9 cents.
 For liquor it may be 2 to 4 cents.
 For sundries it will be about 5 cents.
 And the remainder for rent or shelter, if no liquor is used . 9 to 11 cents.
 If liquor is used 7 to 9 cents.

Now, I think it is very safe to put the waste of food material at 20 per cent., or 5 cents a day; if this mis-spent force and one-half the average cost of liquor, or 2 cents a day, could

be converted into shelter—that is to say, to providing a more ample dwelling by either buying or leasing—it would suffice to enlarge the present quarters by one-half to three-fourths. Five cents a day per adult comes to \$1,000,000,000 or more a year, counting two children of 10 or under as equal to one adult. But the greater benefit which would come from a true art of preparing food would consist in the increase of the productive force of the community, so that the provision for dwelling might be increased both absolutely and relatively. I might add another treatise to this, on the waste of force in bad building and from the common practice of what I have named the art of combustible architecture but time will not serve. Suffice it that the product of this nation is more than ample for the abundant subsistence, the adequate shelter and the complete clothing of every family in it, yet we witness want in the midst of plenty because we waste enough to support another nation at the standard of French economy and thrift, especially in the matter of food.

LIGHT GYMNASTICS FOR SCHOOLS.*

BY F. N. WHITTIER, A.M., M.D.,

Director of Sargent Gymnasium at Bowdoin College,
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The past decade has marked a new era in the history of physical training.

Most of the courses of physical training offered in our colleges and large schools, are patterned after the plan devised by Dr. D. A. Sargent of Har-

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vard University, a native of Maine and a graduate of Bowdoin who has probably done more than any one else for the advancement of physical education.

Dr. Sargent's plan in brief, is this: each student, on his first entrance to the gymnasium, is subjected to a strict physical examination. Such points in his personal and family history, as may have had a bearing on his growth or development, are noted. Fifty different measurements are taken. The strength of various sets of muscles tested. The heart and lungs are carefully examined. Having by this means found in what parts the student is weak, the examiner prescribes specific exercises for such parts, prescribing one exercise for a weak back, another for weak lungs, keeping carefully in view the nature of the weakness in each case.

In addition, class exercise is generally required. Here may be given, the "free hand" exercises which are calisthenic exercises performed without apparatus, or the exercise may be with dumb bells, Indian clubs, wands or chest weights, while only the stronger students are allowed to exercise on the heavy apparatus, such as parallel bars, rings, etc.

The advantage of these class exercises are three-fold.

- (1) The exercises are so arranged as to give, as nearly as possible, the amount of exercise needed by each muscle of the body.

- (2) The performance of difficult movements, or perhaps several movements at the same time, tends to increase the command of the mind over the muscle, and gives grace where before there was awkwardness.

- (3) The demands upon the powers

of attention, of will and of self-control in the course of the accurate performance of gymnastic drills, give a valuable mental discipline.

Now what have been the results of this system?

As to physical results, records have generally been carefully kept and in many cases published. They uniformly show such striking gains that they are almost incredible, except to one who has had some experience of this kind. Indeed physical training, supplemented by out of door athletics, has completely changed the type of college men. A generation ago the very name, college student, presented to the mind a picture of a youth, slight, pale and stooping, with a tendency toward consumption. Now it is probable that no class possess finer physiques or enjoy better health than do college men. In regard to the effect upon scholarship, it has been the uniform testimony of all educators who have given the plan a fair trial, that a proper amount of time given to physical training enables the student to do at the same time better mental work.

But the field of the college gymnasium is narrowed, first, because of the comparatively small number whom it can reach, and again because many college students have passed the age at which gymnastic exercises give their best effects. After growth has ceased and the bones, ligaments and muscles have become stiffened in their positions, it is difficult, and in some cases impossible, to remove weaknesses or deformities that could easily have been corrected or prevented a few years before.

How then can physical training be brought within reach of all? There seems to be only one way to accom-

plish this, and that is to place it in the public schools. It is plain that the college system must be greatly simplified, and that our first attempts must be on a very small scale. But at the same time we must insist that we have physical training and not simply a set of gymnastic exercises. The "gymnastics," as taught in most schools, consists of a series of exercises collected from various sources, arranged in an order without rhyme or reason, without any thought in regard to what each exercise is doing or what ought to be done. No harm can come from these light calisthenic exercises; in most cases they do much good. And yet the good results fall far short of what might be obtained from more systematic and scientific work.

The value of gymnastic exercises in the development of brain and the formation of character is just beginning to be understood. It has recently been well shown by the careful experiments carried on by Dr. H. D. Wey at the New York State Reformatory at Elmira. Wishing to give the theory a fair test, Dr. Wey selected twelve of the dullest boys in school and gave them a thorough course in physical training, the boys themselves having no knowledge of the object of the experiment.

Their average rank in their studies for the five months immediately preceding the experiment was about 45 per cent., while during the five months' course in physical training their average was 74 per cent., and what is still better, they maintained their advanced standing during the six months following the discontinuance of the course; thus showing that the effect was permanent. In his report Dr. Wey says, "With physical culture and improvement there came a mental awakening,

a cerebral activity never before manifested in their prison life. Their faces parted with the dull and stolid look they had in the beginning, assuming a more intelligent expression while the eye gained a brightness and clearness that before was conspicuous by its absence."

That the physical training had also an effect upon their moral natures is made evident by the fact that Dr. Wey's records show that the gain in general deportment even surpassed the gain in scholarship.

The recognition of this principle enabled the Greeks to build up in a few centuries a civilization the finest in many respects that the world has ever seen. The failure to recognize it is filling our country with weakness and ill health, and, if the theory of most scientific observers is correct, with insanity and crime as well.

I have heard teachers give three reasons for their objection to the introduction of gymnastic exercises in their schools.

(1) *No money to buy apparatus.* Now this can be met by giving free-hand exercises, which are indeed to be preferred in all cases at the start.

(2) *No suitable room in which to exercise; would have to exercise in the school-room, standing in narrow aisles.* To this it may be said that if a little care and ingenuity be used in the arrangement of exercises and pupils, the narrowness of the aisles will interfere very little.

(3) *No time for it; the school curriculum is already crowded.* This last reason they seem to regard as conclusive, but, if the experience of all those who have tried it is worth anything, no time is lost by giving a fair amount of attention to physical training. Was

the twelve hours a week given by Dr. Wey to his class at Elmira a waste of time? But would it not be excusable even to graduate our boys and girls with one "ology" the less if by this means we could give them bodies sounder, healthier and more symmetrical?

On looking at a group of school children, one is struck by the commonness of certain physical defects brought about largely by their school life.

First, we find the "droop neck" and "round shoulders," caused by faulty positions and lack of proper exercise. Depending on similar causes we find weakness of the muscles of the back or abdomen, leading in aggravated cases to spinal curvature or hernia. Lack of vigorous exercise causes weak lungs and heart, which may predispose the individual to phthisis or heart disease later on in life. All these physical defects are more common in girls than in boys, for the reason that girls indulge less in vigorous sport and games, and without doubt these defects are the cause of much of the proverbial ill health of American women.

Our first duty then, in arranging a course of exercise for school children, is to pay special attention to those weaknesses and deformities which at their early age can be easily corrected. Take for example the droop neck, *i. e.* the inclination forward of head and neck, so common among students. The cause is weakness of those muscles whose office is to hold the head erect. The weakness is due either to lack of exercise of these muscles or, what is practically the same thing, the habitual inclination of the head as over a book or slate. Now how many children are ever properly instructed

in regard to the correct method of overcoming this deformity?

Of course the natural treatment is to strengthen the weak muscles by means of the proper gymnastic exercises.

Instead of that, parents and teachers continually urge the child to "straighten up." In trying to do this a constant strain is placed on the weak muscles which has the effect of making them even weaker than before. In order to understand this point, it is necessary to see clearly the distinction between the true exercise of a muscle which consists of alternate contraction and relaxation, and the keeping a muscle in a state of prolonged contraction as is the case when we are forcibly holding the head erect or are holding a weight at arm's length. In the former case the muscle is strengthened, in the latter it is made weaker.

Round-shoulders are caused by the weakening of a set of muscles which strengthened are nature's shoulder braces. The artificial shoulder braces simply take the place of these muscles which, then having no work to do, become still weaker from disuse, thus making a bad matter worse.

Undue weakness of the muscles of the back or abdomen is often seen in school children. To this source three-fourths of the cases of spinal curvature and hernia may be traced. Among girls weakness of these muscles is caused or aggravated by the wearing of corsets which take the place of the muscles in supporting the body. Now we must constantly keep in mind this fact, that if we neglect to use a muscle, it becomes smaller and weaker in consequence. So, if when the corsets are first worn the muscles are strong, they soon become weak from disuse. If the muscles are weak at first, the

corsets give a false sense of support, but in the end increased weakness is sure to result. When the corsets are loose they still produce the same effect, though in a somewhat lessened degree. Here as before the only correct treatment is the strengthening of the weak parts by the proper exercises.

In addition to the correction of these physical defects, we should aim to give vigorous general exercises which are sufficiently difficult that the effort necessary to perform them makes them the more interesting to the pupils, and which at the same time tend powerfully to develop and train the powers of will and self control, important qualities of character in regard to which our modern system of education seems to have no concern.

In the series of exercises given here, an attempt is made to fulfill these indications. These exercises have all been carefully tested in the Brunswick Grammar School, where by the invitation of the principal, Miss Annette Merriman, the writer has been able to work out a plan of exercise which it is hoped will prove suitable for an introductory course in the public schools.

There were in the school over one hundred pupils. Every seat was occupied and it was found necessary while exercising to occupy every particle of available space in the floor and aisles in order that the pupils might have room to perform the exercises without interfering with one another. The pupils were arranged in lines, each row of seats running parallel to the aisles furnishing one line. As there were in this case twelve rows of seats there were twelve lines in all. In arranging for the exercises five of these lines were required to march to the places assigned them in the floor or

rear aisle. The other lines simply rose and stood in the aisles opposite their seats.

The method of handling the school was, in brief, as follows:

At the word—Gymnastics! spoken loudly and sharply, the pupils sit erect in their seats with arms folded. At the word—One! those who are to march out turn outward in their seats, facing the aisles. At the word—Two! they stand erect in the aisles, facing in the direction in which they are to march. The next command is—Forward—March! At the word—March! they step forward and march to the places assigned them. At the command—All—Face! they face the instructor. The next commands are directed to those lines remaining in their seats. At—One! they face the aisles. At—Two! they rise and stand in the aisles. The next command is directed to the whole school, and is—Take distance! at which any pupil may step to the right or left, forward or backward, in order to get room for the performance of the exercises. Distance may be tested by raising hands forward and sideward. The school is now ready for work.

After the exercises, at the word—One! the lines standing by their seats sit down, facing the aisles. At—Two! they face around in their seats, coming into position. Next, at the command—All—Face! the lines that marched out face in the proper direction for marching back to their seats. At—Forward—March! they march back. At—One! and—Two! they sit down as before. The instructor will find that he can handle the school much easier if he will first teach them some of the principles of the military drill, especially marching and facing.

Commands are of two kinds—cautionary commands and those of execution. For example, in the command, “Forward—March!” Forward is the cautionary command, while March! is the command of execution.

The scholars should be made to understand that they are not to move till the command of execution is given.

The instructor should deliver the commands clearly and sharply, and great precision should be required in all movements.

body are held erect, with the shoulders well back. The arms hang at the sides in a natural position. It will be noticed that this position is assumed on the last count of every exercise, and in all the simpler exercises, as those given first, this position is assumed on all even counts or beats, as 2, 4, 6, etc. The command for assuming this position is: In position—Stand! All movements necessary being done at the word Stand! which is the command of execution.

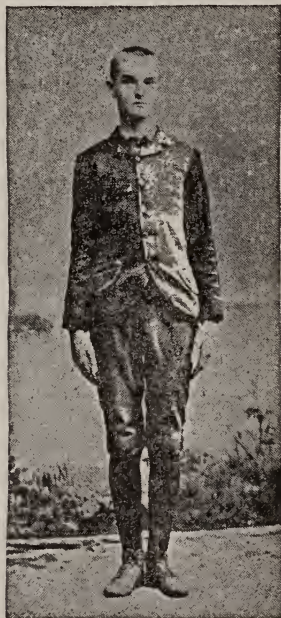


Fig. 1.—Fundamental position.

The exercises should be carefully explained and performed by the instructor before they are given to the class.

We will suppose now that the school is properly arranged for exercise. First teach them to stand in the fundamental position, as shown in Figure 1. Here the heels are locked, the toes are turned outward so the feet form an angle of sixty degrees. The head and



Fig. 2.—Resting Position.

Another position, the resting position, will be found useful. (Fig. 2). Here the arms are folded in front, while the left foot is placed some six inches forward. The weight of the body rests mostly on the right foot. The command for assuming this position is: At Rest—Stand! The pupils should be drilled to assume these positions promptly at the word of command, and when not actually exercising should be kept in one or the other

of these positions. The instructor must remember that all gymnastic exercises must be performed with the greatest accuracy, because, as has been explained, the discipline given by this accuracy is one of the things most to be desired, and again, if the exercises be performed in a careless way, the scholars themselves soon lose interest. While the more dash and snap he can infuse, the more interested the pupils will become. This makes it necessary for the teacher to learn to perform the exercises easily and gracefully before



Fig. 3.—Arm Raised Forward—Step-Position Forward.

attempting to teach them to the class.

The exercises given are divided into Part I and Part II. Part I contains simple exercises for training the scholars to move together, and at the same time leading up to the more difficult movements. Part II contains a series of exercises, which, after they have been carefully taught and their order memorized by the scholars are to be used as a gymnastic drill. The pupils

will perform this drill from beginning to end without stopping, keeping time to music or to the counting of an instructor.

PART I.

EXERCISE I—RAISING ARMS FORWARD.

In position—Stand!

(1) Raise right arm forward (Fig. 3).

Begin! 1-2-3-4-5-6-7—Stop!

NOTE.—This exercise is performed with two motions. As the teacher counts ONE, each pupil raises the right arm, keeping it perfectly straight, into the position shown in Fig. 3; at TWO, the arm is brought down again into the position shown in Fig. 1.

The pupils will continue this exercise until they get the command—Stop! which will usually be given on the eighth count. The command for beginning any exercise is—Begin! spoken loudly and sharply. At first it is always better for the teacher to mark time by counting—ONE, TWO, THREE, etc. It is usually found more convenient to count no higher than eight, but then to begin at ONE again.

Counting should be sharp and spirited. The rate of counting should be from 60 to 80 counts per minute. The movements are really changes from one position to another performed very quickly, exactly upon the count or beat of music. The position assumed upon one count or beat of music should be maintained during the interval preceding the next count or beat. *Care must be taken not to be confused by the positions of the feet shown by the cuts.* In all these arm exercises the feet remain throughout in the position shown in Fig. 1.

(2) Raise left arm forward.

Begin! 1-2-3-4-5-6-7—Stop!

(3) Alternately raise right and left arms forward.

Begin! 1-2-3-4-5-6-7—Stop!

NOTE.—At ONE, raise right arm (Fig. 3); at TWO, bring arm down (Fig. 1); at THREE, raise left arm, etc.

(4) Raise both arms forward simultaneously (palms down).

Begin! 1-2-3-4-5-6-7—Stop!

NOTE—The teachers will often find it convenient to continue each exercise for a longer time than eight counts. In this case count up as high as 16 or 24 giving the command—Stop! on the 16th or 24th count. The pupils must understand that they are to keep on exercising until the command—Stop! is given.

EXERCISE II—RAISING ARMS SIDEWARD.

- (1) Raise right arm sideward (Fig. 4). Begin! 1-2, etc.



Fig. 4.—Arm Raised Sideward—Step-Position Sideward.

NOTE.—At ONE, the arm is raised into the position shown in Fig. 4; at TWO, return to position shown in Fig. 1, etc.

- (2) Raise left arm sideward. Begin! 1-2, etc.
 (3) Alternately raise right and left arms sideward. Begin! 1-2, etc.

NOTE.—At ONE, raise right arm (Fig. 4); at TWO, bring arm down (Fig. 1); at THREE, raise left arm, etc.

- (4) Raise both arms sideward (Fig. 5). Begin! 1-2, etc.



Fig. 5.—Arms Raised Sideward—Bending Knees.

EXERCISE III—RAISING ARMS FORWARD OVERHEAD.



Fig. 6.—Arms Raised Forward Overhead—Step-Position Forward.

(1) Raise right arm forward overhead (Fig. 6). Begin! 1-2, etc.

NOTE.—At ONE, raise right arm overhead with palm forward and at the same time turn the face upward as shown in Fig. 6.

At TWO, back to position (Fig. 1).

In every case, the arm while being raised or lowered, should be kept perfectly straight.



Fig. 7.—Arms Raised Forward Overhead—Rising on Toes.

(2) Raise left arm forward overhead. Begin! 1-2, etc.

(3) Alternately raise right and left arms forward overhead. Begin! 1-2, etc.

(4) Raise both hands forward overhead, at the same time turning the face upward (Fig. 7). Begin! 1-2, etc.

NOTE.—It will be noticed that in all these exercises the scholars come back to the Fundamental Position (Fig. 1) on every even count as 2-4-6, etc.

EXERCISE IV.—RAISING ARMS SIDEWARD OVERHEAD.

(1) Raise right arm sideward overhead (Fig. 8). Begin! 1-2, etc.

NOTE.—Here the head is turned to the right, the face turned upward and the palm outward, as shown in Fig. 8.



Fig. 8.—Arm Raised Sideward Overhead. Step-Position Sideward.

(2) Raise left arm sideward overhead. Begin! 1-2, etc.

(3) Alternately raise right and left arms sideward overhead. Begin! 1-2, etc.

(4) Raise both arms sideward overhead. Begin! 1-2, etc.

NOTE.—Here the palms of the hands are turned outward; the backs of the hands toward each other.

The teacher should now have the pupils go through with all the exercises that have been given without stopping, repeating each movement four times, or during eight counts.

EXERCISE V.—STEP-POSITIONS FORWARD.

- (1) Step-position forward right (Fig. 3). Begin! 1-2, etc.

NOTE.—At ONE, the right foot is carried forward as if a step was to be taken (Figs. 3 and 6), except that the entire weight is supported by the left leg, while the heel of the right foot does not touch the floor. No weight is rested on the right foot, which is turned slightly outwards. At TWO, come back to position (Fig. 1). In all these step-positions the arms are held at the sides, as in Fig. 1.

- (2) Step-position forward left (foot). Begin! 1-2, etc.

NOTE.—Same as (1), except that the left foot is used.

- (3) Step-position forward alternately right and left.

Begin! 1-2, etc.

NOTE.—At ONE, the right foot is carried forward (Fig. 3); at TWO, it is brought back to position (Fig. 1); at THREE, the left foot is carried forward, etc.

- (4) Rising on toes (Fig. 7).

Begin! 1-2, etc.

NOTE.—At ONE, rise on toes (Fig. 7); at TWO, back to position (Fig. 1).

EXERCISE VI.—STEP-POSITIONS SIDEWARD.

- (1) Step-position sideward right (Fig. 4). Begin! 1-2, etc.

NOTE.—At ONE, the right foot is carried outward and at the same time turned so that the toe points directly toward the right (Figs. 4 and 8); at TWO, the foot is brought back to position (Fig. 1).

- (2) Step-position sideward left.

Begin! 1-2, etc.

- (3) Step-position sideward alternately right and left. Begin! 1-2, etc.

- (4) Bend both knees (Fig. 5). Begin! 1-2, etc.

NOTE.—At ONE, bend at the knees as shown in Fig. 5; at TWO, return to the position shown in Fig. 1.

(TO BE CONCLUDED IN DECEMBER ISSUE).

PURE WATER SUPPLIES.

BY GEO. G. GROFF, M.D.,
Member State Board of Health of Pennsylvania.

I have often been impressed with the fact that while cities and towns claim to have pure water, (often *pure mountain water*) they are still afflicted with much typhoid fever, dysentery, etc., diseases directly traceable to impure water. The following items from a report I have recently made, will possibly explain how much of this sickness is caused. The water I examined was claimed to be *perfectly pure mountain water*.

Passing from the pool situated in a primeval forest, up the stream, at a few hundred yards, I emerged into a very broken and irregular basin, comprising from 1,000 to 2,000 acres of land, a considerable portion of which is under cultivation and is divided into some twelve farms. In this basin, the stream arises, being formed of a number of rivulets, which arise from some fifteen or twenty springs. I found that the drainage from *every one* of twelve farm buildings (houses, barn-yards, pigsties, hen houses, privies, etc.,) was directly into these rivulets which form the run, and the drainage from these buildings cannot be disposed of in any other way because of the steepness of the hillsides, all waste being quickly carried into the course of the stream.

At a farm house 4,400 feet from the proposed pool, I found a drain leading from the kitchen directly to the stream. The elevation at this house is about 1500 feet above the pool. At one mile and forty-four rods from the pool, I found a privy from which excrement was oozing. This privy was but nine feet from the stream, and on a nearly vertical hillside. Here also was a

wash house, all of the filth from which was discharged into the stream. The elevation above the pool about 150 feet. At another point, one mile and twenty-two rods from the pool, and at an elevation of 141 feet, I found a cluster of farm buildings on a *very steep* hillside, so that everything from barnyard, pigpens, privy, hen house and kitchen, went directly into the stream. Here the privy was *directly* over a number of springs from which flowed a small stream to join the run. There were also several never-failing springs in the pig-yard, and the kitchen slops were thrown directly into the small stream which ran by the kitchen window. I found everything here in a filthy condition. At another point, about one mile from the proposed pool, I found a privy discharging a putrid stream directly into a little current which quickly runs to the pool.

I was told by one of the oldest physicians in the town that dysentery and typhoid fever are not infrequent in this basin, indeed, that cases of the former occur almost every summer. In view of the fact, that all excreta, not buried in the earth, must quickly pass to the pool, it seems to me that it would be a very unwise thing to permit this stream to be used as a source of water supply. I wish to add, that none of the farm buildings in this basin are over two miles from the proposed pool, so that all the conditions are here present to produce just such an epidemic as decimated Plymouth a few years ago. All that is needed, being a case of typhoid fever at one of the farm houses in the basin.

In a personal interview with the contractor of the water works and members of the town council, I learned that they had no knowledge of these

sources of contamination at all, and really believed, (without any examination) that they were securing pure water.

A few years ago a large number of diseased cattle were killed and thrown into a river, *near the inlet* of the water supply of a large city in this State, where the carcasses remained for some weeks in the summer undetected! So much for much pure water.

NO YELLOW FEVER IN FLORIDA.

BY R. P. DANIEL, M.D.,
President of the State Board of Health of Florida.

We have had no information of a case of yellow fever in Florida since the one reported in Sanford last April; and I do not believe that there is any existing within the boundaries of our State at this time. A sporadic case might possibly be concealed from the knowledge of the Board, but sporadic cases could not exist in this climate at this season of the year. We have now reached the middle of September, and it appears scarcely possible that, if there had been any germs of last year's fever remaining, they should not have developed ere this; and, so far as the danger of infection from foreign sources is involved, I think that it can be safely asserted that the risk is small, and the importation of yellow fever into Florida this year, very improbable. It is true that we have by no means worked out satisfactorily the problem of assured protection against this source of danger, and that we profess our inability with State Authority and means to control the situation and to thoroughly guard so extensive and intricate a coast-line,

scarcely one hundred miles, at its nearest point, from Havana. We believe that this feature of the task involved in the protection and preservation of the health of our State is one, which not only involves the interests and welfare of Florida immediately, but likewise, those of the country at large; and that as our State possesses neither the means nor the authority to execute it effectively, it becomes the duty of the General Government to take this part of the work in hand. However, I feel that we have made such provision for our protection for the present season, at least, as gives us good grounds for concluding that we are exceedingly unlikely to have any trouble between this and frost; and I hope that ere another summer comes around, our means of protection against epidemic disease, both from without and from within, will be such as shall give entire confidence, both to ourselves and to the outside world.

Since the above communication was received, the State health officer of Florida, Dr. Joseph T. Porter, publishes the following:

The occurrence of four sporadic cases of yellow fever in Key West, within a period of one month, and in different portions of the city, one of which cases is still sick, warrants the assumption of belief of the possibility of the presence of infection, from whatever source introduced, still remaining. Therefore, in accordance with the provisions of Paragraph IX of the act creating a State board of health, the following regulations are announced and will be enforced:

"1. Communication by unauthorized persons with the Methodist parsonage of the First Methodist Church, in Key West, is forbidden.

"2. The occupants of said parsonage are forbidden to appear upon the streets of the city, and any person is forbidden to take any

article of bedding or wearing apparel from said premises.

"3. A detail from the police of the city has been instructed to watch the above-named premises, for the purpose of preventing the unacclimated from entering the same, and promiscuous visiting by all others.

"The physician in attendance, the spiritual adviser, and the necessary acclimated nurses will not be denied admittance.

SHIPPING.

"1. Masters of steam and other vessels are forbidden to take on board and carry to the main-land of Florida, or to any settlement on any of the keys of Florida, as passenger or passengers, or in any other manner, any person who can not produce a certificate of acclimation (or permit) from the State health officer of Florida; and agents of steam or other lines of vessels are forbidden to sell tickets to any one not holding the above-named certificate."

The weather is now cool, and the lateness of the season, with the probability of the near occurrence of strong and cold north winds, increases the hope, devoutly to be wished for, that this fever, seemingly sporadic in character, may cease at the termination of the present case. At present there is no indication of an epidemic ensuing, and no reason why, under needful and proper restrictions, the traffic, travel, and business interests of the place should be materially damaged.

[Such energetic measures will doubtless be effective in restricting the disease. Ed. A. of H.]

EDUCATING THE PUBLIC IN HYGIENE.—Dr. Chevalier Q. Jackson, of Pittsburgh, deserves great credit for the efforts he is making to educate the people in the science of hygiene, by contributing valuable papers on sanitary subjects to the newspapers. It is really the duty of the profession to enlighten the public in this direction and we are glad to chronicle that very many physicians seem fully alive to their duty in this respect.

A BRIEF HISTORY OF PUBLIC SANITATION IN THE CITY OF PITTSBURGH.

BY CROSBY GRAY,

Chief Clerk, Department of Public Safety, and ex-
Health Officer of Pittsburgh.*

The Borough of Pittsburgh was erected into a city by virtue of an Act of Assembly passed March 18th, 1816.

Prior to the year 1851, public sanitation was of a somewhat mythical and legendary character. The public records are almost entirely silent upon the subject, except that they mention the fact of an annual appropriation of one thousand dollars having been made during a series of years before that date, for "Sanitary purposes."

How, or by whom these several amounts were expended, are questions which investigation has failed to answer.

Probably on account of the threatened advent of Asiatic Cholera into the country, the necessity for the establishment and equipment of a sanitary organization or body for the better protection of the public health, was realized by the city authorities. The Legislature was accordingly appealed to, and enacted a law creating a corporation to be known by the name, style and title of "The Board of Health of the City of Pittsburgh."

The title of said Act may be regarded as quite unique, and is a relic of the good old days of special and omnibus legislation. At this time, when the question of Prohibition *vs.* License is being so earnestly and ably discussed, a special reference to it may not prove uninteresting.

It reads as follows:—

"An Act to establish a board of

health, and to secure the City and port of Pittsburgh from the introduction of pestilential and contagious diseases; and relative to the granting of tavern licenses in Butler County."

What analogy there may have been between the establishment of a sanitary plant in the City of Pittsburgh, and the gratification of the bibulous propensities of the average Butler County citizen, through the medium of a legislative indulgence, is a subject which I leave to the future historian and searcher after truth.

This Act provided for the incorporation of a board of health to consist of nine citizens, to be elected by the City Councils and prescribed its duties, invested it with power to establish quarantine, and adopt rules for the government thereof; and, provided in a general way, for the removal or abatement of nuisances.

It also provided for the registration of deaths. This provision required the physician or surgeon in attendance upon any person who may have died in the City, to leave a note in writing with some member of the family of the deceased, specifying the name, age, color, residence, whether married or single, employment, and disease of which said person died. In case no physician or surgeon had been in attendance, or in case said physician or surgeon refused or neglected to perform said duty, then the family of the deceased should apply to a physician appointed by the board of health to make the necessary examination, and furnish the note referred to. The sexton of any church, or the person or persons in charge of any cemetery, vault or burial ground within five miles of the Court House of Allegheny County were prohibited under

*Read before Sanitary Convention held in Pittsburgh, June 1st, 1889.

pain and penalties from permitting the interment of the body of any such person, until he had received said note in writing. The sexton was required to enter said note upon a blank schedule to be furnished by the board of health, and delivered with said schedule on Monday of each week to the health officer for publication in such form as might be directed by the board.

The inefficiency of such provisions for a correct registration of deaths, must be apparent to the most casual observer.

The rapidly approaching danger from cholera, developed the necessity for a more extended and comprehensive scope of power and authority on the part of the board of health.

In order to effect this, the Legislature was again invoked for aid. On April 8th, 1852, a supplement to the original Act was approved and became a law. It imposed a number of additional duties upon the board of health, such as the collection and removal of nuisances found upon the public highways, wharfs, docks, &c., requiring privy-wells to be emptied or corrected, giving authority for securing, by purchase or otherwise, a place or places where said material should be deposited; providing for a systematic plan for removing the contents of cesspools, and other offensive substances; prescribing the kind of vehicles to be used for making said removals, fixing the fees for licenses, and permits to engage in said business; prescribing the mode of legal procedure, and fixing the penalties for violation of said provisions; and also authorizing the appointment of a health officer, who should be the executive officer of the board.

Contrary to general expectation, cholera only prevailed to a limited extent during the years 1851-52. In the absence of any record of the number of cases, and depending upon the record of deaths (which was necessarily incomplete) the prevalence of the disease must have been very limited, or the rate of mortality very low, as in 1851 but a single death is charged to that cause, and in the following year, only four.

The year 1854 was signalized by the advent of the disease in what must have been a virulent form, as we find it assigned as the cause of 535 deaths.

The records of the board of health fail to show in a very satisfactory manner, the action taken to arrest the progress of the disease.

Enough, however, is gleaned from them, together with the recollections of some of the oldest inhabitants to warrant the belief, that the preventive measures used consisted principally in the cleaning and probable disinfection of quite a number of privy vaults, the sprinkling of lime in the street gutters, and the lighting of numerous bonfires in the infected districts, as if perchance the anger of the pestilential god might in some manner be appeased by a burnt offering.

In the foregoing remarks, we do not desire to be understood as reflecting in any manner upon the good sense, or efficiency of the sanitary authorities of that day. Their knowledge of how best to combat such a disease was necessarily circumscribed, and a paltry thousand dollars per annum, which was the amount of the appropriation made during a series of years, both before and after the date referred to, would not justify a great deal of scientific research, or a very lavish expen-

diture. They did the best they could under the circumstances, and deserve due credit for it.

Almost from the date of the organization of the board of health, it had been somewhat intimately associated with the board of Guardians of the Poor. They occupied the same suite of rooms, the Secretary of one was appointed health officer of the other, and several members of the poor board were also members of the health board. Finding that very often the usefulness of the latter was being subordinated to that of the former, thus working injury to both, it was thought best that a decree in divorce should be issued. For that purpose the Legislature, at its session of 1869 and 1870 passed an Act declaring the holding of membership in both boards at the same time to be incompatible. This resulted in the immediate resignation of several members of the board of guardians of the poor, as members of the board of health. This action marked the beginning of a new era in the history of the health board, and one much to its advantage. It at once sought other quarters.

On the first day of February, 1869, much to his surprise, the writer was honored by being elected health officer. Without any experience whatever in the conduct of affairs pertaining to public sanitation, he, with considerable mental hesitation, accepted the position, and at once assumed the duties.

The stock in trade on hand consisted of one city code; two death registers, containing the mortality list up to that time; one minute book, containing a record of the proceedings of the board from the date of its organization; one cesspool permit book; three

hundred blank certificates of death, printed in sanguinary colored ink; two hundred blank schedules for use of sextons in making returns; three hundred blank notices for abatement of nuisances; one hundred blank lists of diseases, arranged alphabetically; one antiquated desk, and a half dozen chairs.

The working force consisted of the health officer and one assistant. The population of the city was estimated to be 85,000.

Relying upon the oft tendered support and assistance of some three or four members of the board, the health officer commenced a task which, after an experience of twenty years, appears to have been of herculean proportions. A number of reforms were found necessary to bring the service up to a standard of excellence in keeping with a rapidly growing city, and to in some measure keep pace with that of some of her sisters.

In the inauguration of these reforms, the wise counsel and energetic support of the members and officers of the board were of incalculable value. Among those deserving of special mention in this connection were the late Hon. A. H. Gross, M.D., then and for a number of years President of the board; the late Hon. Matthew Edwards; the late Marshall Swartzwelder, Esq., then Solicitor of the board; and that efficient and thorough sanitarian Dr. W. Snively, who for sixteen years so ably filled the position of Physician and Registrar of Vital Statistics.

The first reform determined upon was in improvement in the mode of removal of, and disposition of the contents of cesspools.

From time immemorial, this material

had been removed in open wooden box carts and deposited along the banks of the rivers, or on the various dumps which abounded. After a strenuous effort upon the part of the board and its officers, resulting in considerable litigation and being productive of much unjust criticism, a partial success was achieved. The old and disgraceful wooden carts were abandoned and supplanted by cylindrical iron tanks, mounted on four wheels and by means of proper appliances, made almost, if not quite, air tight. The old method of disposal was, also, after a hard fight abandoned. Dump boats were moored in the rivers from which the material was deposited in the streams. This has been, within the past dozen years, partially improved upon by the substitution of a boat *into* which the contents of cesspools, and other offensive material is deposited, when it is towed down the Ohio river to a point below the City limits, and dumped.

It is hoped that the pollution of the rivers and waste of valuable material resulting from this system, will not be perpetuated.

The next important reform undertaken was the establishment of a system of registration of Vital Statistics. As before referred to, the original Act of Assembly provided for a registration of deaths.

This record being of no value for sanitary or statistical purposes, the necessity for reliable information was each day becoming more apparent and imperative.

In compliance with an expressed wish, an Act of Assembly was passed at the session of 1870, providing for a complete and systematic registration of marriages, births and deaths. This Act was modeled, in many res-

pects after that of the City of Philadelphia. Its provisions are very comprehensive and cover the most important items of information necessary to the compilation of statistics which are of value not only to the Sanitarian and Statistician, but to the general public. In this respect, the reports on Vital Statistics issued by the board of health since 1873 have been regarded as models of excellence, and been referred to by many of the most prominent Vital Statisticians of the country.

The nomenclature adopted and used in the classification of diseases, is that of the Royal College of Physicians and Surgeons of London, with some slight modifications.

A strict enforcement of the requirements of the registration Act has resulted in obtaining a record of at least ninety-five per cent of the marriages performed, seventy-five per cent of the children born, and what is believed to be a complete record of the deaths.

We are of the opinion that this showing will compare very favorably with that of most other cities.

After due consideration, it was determined that in order to more effectually protect the public health, a complete revision of the laws enacted for that purpose was an absolute necessity.

The original Act, together with the various supplements thereto, passed as the exigencies required, had become very cumbersome and complicated; indeed, was much like the boy's celebrated pants "patch upon patch, and a hole in the middle." In consequence, an Act was prepared, entitled "An Act to revise and amend the health laws of the City of Pittsburgh," which Act was passed at the session of 1872. In many respects it was

modeled after the health laws of the City of Chicago. It very greatly enlarged the powers and duties of the board of health, provided for the appointment of additional officers and employees, and prescribed their duties.

The small-pox epidemic of 1871-2 found the working force of the board entirely inadequate to successfully combat it. A corps of sanitary inspectors was at once organized for special service, under the direction of the health officer.

The success attending these appointments was so gratifying, that the system was continued permanently, and is still in force, the city being divided into districts and an officer assigned to duty in each. Most of those now in service have been so employed for a number of years and from long experience and careful training, are well qualified to perform their duties.

As before referred to, small-pox prevailed quite extensively in this city during the years 1871-2. It was also quite prevalent in 1874-5, and again in 1881-2. Prior to 1875 the board of health was compelled to rely upon the limited accommodations of Mercy Hospital and the Pittsburgh Infirmary (both private institutions) for the care of small-pox patients, and it was only upon the most urgent solicitation that they consented to admit them. They claimed, and very justly too, that it was endangering the health and lives of the other inmates to admit such cases, a risk which the city had no right to ask or expect them to assume. During the prevalence of the disease in 1872, these institutions served peremptory notice on the board that in future they positively would not admit such patients. The board of health

had frequently urged upon City Councils the imperative necessity of making proper provision for the care of such cases, but without avail. The Act of Assembly of 1872, previously referred to, authorized the board of health to provide, by purchase or otherwise, a suitable site or building for hospital purposes. The board was exceedingly desirous of availing itself of the power and authority thus vested, but owing to the refusal or neglect of Councils to provide the necessary funds, it could do nothing.

However, a knowledge of the existence of such a provision in the law, coupled with the peremptory notice from the hospitals referred to, and which had been transmitted to Councils, served to create in them an unusual interest in the subject.

They at once appointed a special committee of five to confer with the board of health relative to the establishment of a small-pox hospital. This action finally resulted in the purchase of four and one-half acres of ground in the Thirteenth ward, during the year 1874, and the erection thereon in 1875, of a frame hospital building, capable of accommodating about fifty patients. Additions have since that time been erected, so that the present capacity is sufficient for the accommodation of from eighty to one hundred.

The advantages derived from such an institution need not be dwelt upon in addressing a body of gentlemen possessing such extensive experience in the prevention and treatment of such diseases, but suffice it to say that but for its existence, the various outbreaks of small-pox which have occurred since its establishment, would have been much more serious, and the loss of life resulting therefrom very greatly

augmented. A comparison of the mortality among those treated in the hospital, and those treated at home, has always been largely in favor of the hospital treatment.

Under the provisions of the Act of 1872, and the amendment thereto passed in 1883, physicians are required to report forthwith, all cases of small-pox or varioloid, diphtheria, scarlet-fever, typhoid-fever, typhus-fever, yellow-fever, cerebro-spinal fever, or Asiatic cholera, which may be under their care.

Upon receipt of such report, a sanitary policeman is at once sent to the infected house or locality, and a thorough inspection and report made. If small-pox, the importance of immediate removal to hospital is urged. Under certain circumstances and conditions, as set forth in the Act, such removal can be compelled. In any event the house and premises are carefully guarded, and after the recovery or death of the patient, the infected bedding and clothing are destroyed, and the apartments thoroughly disinfected and fumigated.

A regulation of the health bureau provides that children shall be excluded from attendance upon any school: either public, private, or parochial, unless they present a certificate signed by a physician, setting forth, that, of his own knowledge, said child has been successfully vaccinated, provided it has not already had small-pox.

Another regulation provides that children who have been suffering from small-pox, scarlet-fever or diphtheria, or who may reside in the house where any of said diseases have existed, shall be precluded from attendance upon any of the schools until thirty days

have elapsed after the convalescence or death of the person last affected; this to be certified to the school authorities by the attending physician, or the physician of the bureau of health.

During the past year an attempt was made to induce City Councils to incorporate in an ordinance the foregoing provisions, as well as one regulating the funerals of persons who may have died of any of the aforesaid diseases, but it failed for lack of a legal majority. It is hoped, however, that said regulations will, in the near future, have the additional force of municipal law.

When the condition of the appropriation justifies the expenditure, the city is divided into districts, and a corps of vaccine physicians appointed.

They are required to carefully canvass their respective districts, and tender gratuitous vaccination to all who are unprotected, and who may be proper subjects for such gratuity.

In the performance of their duties the vaccine physicians are governed by the following rules:

a. To use strictly pure and fresh animal (bovine) vaccine (which will be furnished at cost price at the office of the Bureau of Health).

b. To employ a surface, by scarification (which is preferred), that shall embrace two points, each not less than one-third inch square in extent; one or both arms or legs to be taken, and an entire quill, or its equivalent, to be used on each person.

c. To examine, at the lapse of proper time, each person whom they vaccinate, and ascertain the amount of success, which shall be reported to the Superintendent of the Bureau of Health, together with the name, age

and residence of the individual vaccinated.

d. To vaccinate unprotected individuals, and of such, those alone whom circumstances have made proper subjects for this charity, so far as possible by careful inquiry can be ascertained. Each physician shall, before presenting his statement, certify under oath that the foregoing rules have been strictly complied with.

e. The compensation of the Vaccine Physicians shall be at the rate of fifty (50) cents for each vaccine mark made as described in clause "*b*" of this rule; *provided*, that only successful vaccinations shall be charged for, and that the cost in any case shall not exceed fifty cents for each successful scarification.

In common with most other cities, Pittsburgh still wrestles with that most important sanitary question, viz, "What shall we do with the garbage."

Until the advent of natural gas, it was a problem easily solved by those who had the disposition to do so, by destroying it in the ordinary kitchen stove. While some did so, the majority deposited it in their yards, cellars or ash-barrels, and had it removed at regular or irregular intervals, frequently at the urgent *request* (?) of some of the health officials, and deposited it at some scarcely less objectionable locality.

During the year 1887, the board of health determined to attempt the destruction of this material by fire. A furnace for that purpose was erected at an original cost of three thousand dollars, and has been operated quite steadily since that time. Coal, slack, coke and natural gas have been used as fuel at intervals, gas being used at present. The consumption of the material is

quite perfect, the amount consumed during the summer season averaging some sixty tons per twenty-four hours. For the proper and prompt disposal of all the garbage of this city, at least four additional furnaces of the same style and capacity would be necessary. This method is, however, regarded as being too expensive, thus leaving the economic portion of the problem unsolved.

Dead animals are removed, as during the past ten years, by contract; the cost at present being twenty-seven hundred dollars per annum.

Prior to 1886, the cost of removal was considerably less than the above amount. During that year much litigation was indulged in by the residents of the neighborhood in which the place of final disposal was located. This being a subject with which some of the members and officers of the State Board of Health are quite familiar, an extended reference to it is unnecessary.

It is sufficient to say that the animals are now removed to, and disposed of at a point situated on one of our railroads, some sixteen miles distant from the city. During the heated term they are conveyed thither in refrigerator cars. At present the service is quite satisfactory.

Pittsburgh's natural advantages as regards drainage, are of no mean character, upon the contrary, they are first class.

Unfortunately, however, until within the past ten or twelve years, her authorities and people depended quite too much upon natural advantages. Except in the most densely populated portions of the old or original city, but little attention was given to artificial drainage and sewerage.

Several severe outbreaks of diphthe-

ria and other filth diseases have been unerringly traced to this neglect.

I am happy to be able to say, however, that during the past ten years, and at the present time, rapid strides in the direction of thorough and systematic drainage and sewerage have been taken, which, although not nearly completed, have already had a decidedly beneficial influence upon the health of the community.

Pittsburgh's water supply is derived from three sources. That for those districts locally known as the "Old City" and "East End," is obtained from the Allegheny river, a swift and comparatively clear stream, at a point within the city limits, but at a distance of about four miles above the business portion of the city, and beyond the principal sources of contamination.

Scientific tests indicate that the water obtained from this source is of an excellent quality. So far as human foresight can determine, it is likely to remain so for a number of years.

As much cannot be said, however, of that furnished the people residing in the district known as the "South Side," and situated on the south banks of the Monongahela and Ohio rivers.

The principal water supply of this district is obtained from the Monongahela river, a sluggish and murky stream, flowing through an alluvial formation, and obstructed by numerous artificial dams. The point at which the supply is procured is situated at the foot of south Thirtieth street, some twelve blocks above dam number One. Consequently, the water is obtained from the almost stagnant pool resulting from said obstruction.

While in its natural or primitive condition, the water of this stream is

comparatively pure, yet on account of the obstructions referred to, and the fact that it is the catch basin for the filth of at least sixty thousand of a population distributed along its banks for a distance of forty miles, its value as a source of pure water supply is greatly diminished.

An epidemic of what was termed typhoid fever, for lack of a better name, occurred in this district during the summer and autumn of 1887, and was, after careful investigation, traced to this cause.

Especially during a season of low water and high temperature, which condition prevailed at the time referred to, is the danger arising from its use most pronounced. Unfortunately for the welfare of the residents of this locality, City Councils about three years since, concluded a contract with the Monongahela Water Company for furnishing this quality of water for twenty-one years longer.

For additional information regarding the outbreak of fever referred to, and the very thorough investigation as to its cause, permit me to refer you to the comprehensive report of a special committee appointed by the late board of health, and submitted to it in December of 1887, a copy of which was forwarded to your honorable body, and which is now being published in connection with the annual report of the board of health for that year.

The third source of water supply is that obtained from numerous wells and springs existing principally in the East End and South Side districts.

The use of this supply is mostly confined to the latter district, especially when the public supply obtained from the Monongahela river is rendered unpalatable on account of freshets, or

continued drought. That the supply obtained from springs, and especially from wells located in a thickly populated locality is at all times dangerous, or at least not above suspicion, has a number of times been clearly demonstrated in the district mentioned.

Many of the most dangerous of them have been abandoned by order of the sanitary authorities, after due and proper qualitative tests have been made.

In 1888, the office of meat inspector was created, and the duties prescribed by ordinance of councils. It provided for his election by councils, and that he should report to the board of health. Otherwise, the office was not connected in any way with said board, nor had it any control over him.

This arrangement, or combination, not proving satisfactory, a change was decided upon, which was effected by a provision in the Act of 1872, directing that the meat inspector should be elected by the board of health. It also further defined and extended the scope of his duties. This was again amended by the Act of 1873, which imposed upon the meat inspector the additional duty of inspecting dairies and milk. These duties, together with those pertaining to the inspection of meat and cattle, are performed quite as well as can be expected of one inspector. He is clothed with the power to both condemn and confiscate.

The death rate of the City of Pittsburgh for the past fifteen years, will compare favorably with that of sister cities of a corresponding population, (estimated at the present time to be 230,000).

The rate per thousand during that period was as follows:—

YEAR.	RATED.
1874	24.68 a.
1875	21.12
1876	20.39
1877	23.50 b.
1878	21.16
1879	19.49
1880	21.8
1881	27. c.
1882	24. c. d.
1883	19.
1884	20.
1885	18.96
1886	20.6
1887	22.4 d.
1888	19.

- a. Scarlet-fever prevailed.
- b. Diphtheria “
- c. Small-pox “
- c. d. Small-pox and typhoid fever prevailed.
- d. Typhoid fever prevailed.

In justice to the memory of the late board of health, I cannot close this history without a reference to the personnel of a portion of its membership, and officers, to whom so much of the efficiency of its working force was due. In addition to those gentlemen already referred to, special and honorable mention must be made of some members of the medical profession, viz.: Drs. McCandless, Arthurs, Arnholt, Gilmore, Graham, Asdale, McCann, Thomas, McCord, Dunn and Green; of the legal profession, Messrs. Slagle, McCormick and McFarland; of the business community, Messrs. House, Hays, Fleming, Brush, Logan, Voetter, Reitz, McCullough and Jones, all gentlemen standing high in their chosen professions, or business circles, and who for many years served their fellow citizens faithfully, “without money and without price,” having no other hope of reward than the consciousness of having performed their part in saving human life and diminishing human suffering.

Some of these have been called hence by death, and I doubt not are now residents of a city in which the sanitary, as well as all other conditions, are perfect. Others are still with us, occupying high and honorable positions on bench, in bar, professional chairs, and in the business community, but yet who evince a deep interest in public sanitation.

At the Legislative session of 1887-8, a new charter for the City of Pittsburgh was enacted, and went into effect February 1, 1888.

This marked the beginning of another era in the history of the sanitary department of the city government, as well as all others.

It provided for the abolition of all boards and commissions, and vesting their power and authority in departments, and sub-divisions thereof, to be known as Bureaus.

To the Department of Public Safety was confided "the care, management, administration and supervision of police affairs, and all matters relating to the public health, to the fire and police force, the city telegraphs, and the inspection of buildings, including plumbing, gas-fitting and house drainage."

It provided for the creation of a bureau to be known as the Bureau of Health, to consist of a superintendent, and such other officers, clerks, &c., as might be found necessary to fully carry out the objects of its creation.

Thus the old Health Department was abolished, and all its powers, authority and duties were vested in the newly created Department of Public Safety and Bureau of Health, which transfer was effected on February 1, 1888.

During the following month the writer's direct connection therewith

was severed, by reason of his promotion to a position on the personal staff of the Chief of the Department of Public Safety.

The present working force of the health bureau consists of a Superintendent, Chief Clerk, Physician and Registrar of Vital Statistics, Registration Clerk, Meat and Milk Inspector, Vegetable Inspector, Chief Sanitary Inspector, ten Sanitary policemen, Steward of Municipal Hospital and six employés at garbage furnace.

The appropriation for the present year is \$39,500. The efficiency of the bureau is excellent, and compares very favorably with that of similar organizations in other and more pretentious cities.

To you, gentlemen of the State Board of Health, the Department of Public Safety and Bureau of Health, look for guidance and support.

They trust that the many valuable lessons in theoretical and practical sanitation taught by you in the past, not only through the personal efforts of yourselves individually, and of your board as an aggregation, but through the medium of these Sanitary Conventions, all of which so greatly tended to assist and strengthen the hands of the old board of health, may be vouchsafed to them.

In conclusion, the Department of Public Safety through me, extends to all of you a cordial greeting to the "City of Natural Gas," and also tenders a word of comfort and advice.

During your probably extended sojourn in our midst, should you unfortunately contract any of the diseases referred to, its health bureau will promptly convey you to a proper haven of refuge, and carefully tend and nurse you back to health.

Should you discover any disagreeable odors arising from defective plumbing, its Inspector of Plumbing, Gas-fitting and Drainage will be at your service.

Should you desire to indulge in liquid refreshments, you will doubtless be compelled to do so in "Homœopathic" doses, as, thanks to our license court, the number of places where said refreshments can be legitimately obtained, has been reduced to but ninety-three in number.

This, of course, does not include an occasional "speak-easy" which might possibly be discovered by means of the microscope, which you are all supposed to be supplied with. However, should you succeed in securing the quantity necessary to cause any evil effects, its Police bureau will take great pleasure in providing a proper and gentlemanly escort, and conduct you to a temporary place of abode. Should you become exhausted to such an extent as to require heroic treatment, its Bureau of Electricity will be called upon upon to treat you "Electropathically." If this should fail of the desired effect, "Hydrophathy" might be resorted to, through the medium of the Fire bureau, which would take great pleasure in administering "Allopathic" doses of aqua pura, freshly drawn from the Allegheny river, or to use another, and probably slang phrase, "turn the hose upon you."

THE HYGIENIC VALUE OF A GOOD LAUGH.—A good laugh occasionally is better than a whole apothecary's shop of medicine. It is an act of wisdom; it shakes the cobwebs out of a man's brains, and hypochondria from his ribs far more effectually than either champagne or blue pills.

PROPOSED PUBLIC BATHS FOR CHICAGO.—The Trade and Labor Assembly some months ago petitioned the city council for a system of public bath houses. The matter was referred for investigation, and Chief Tenement Inspector Young has prepared plans. He favors bath houses built on the cottage style, 100x55 feet, each to contain forty-one dressing rooms and an office for the keeper. The cost will be about \$3,000 each. The water at one end will be four feet deep and five at the other end. The slope to be gradual. Mr. Young thinks that one should be anchored in each of the park lakes in the city, and others along the lake shore.

IS LEPROSY HEREDITARY?—Ortmann (*Archiv f. Derm und Syph.*) gives a concise abstract of a paper by Dr. Amauer Hansen, in which the author gives the result of an interesting investigation. He went to America to visit the lepers who had emigrated from Norway, and examined in the States of Wisconsin, Minnesota and Dakota lepers who had originally left Norway and their descendants born in America. He arrived at the interesting result that of 160 lepers who had emigrated to America, the offspring had remained free to the third generation. This result shows emphatically that leprosy is not a hereditary disease. The fact that of the 160 emigrants, only sixteen or seventeen are still alive without any new case having sprung up does not, in his view, show that leprosy is not contagious. The different mode of life in the new country does not afford the same opportunity of contagion that is given by the peculiar conditions of life in Norway.

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EDITORIAL.

NO YELLOW FEVER IN FLORIDA.

Elsewhere in this issue we publish a communication from the President of the State Board of Health of Florida, a communication not voluntarily offered in the interest of the State, but as an official answer to a letter of inquiry from this journal.

There are so many Northern persons who have, in the past, been in the habit of spending a portion of each winter in Florida, and who have been frightened away from this beautiful land of perpetual spring by the dreadful ravages of yellow fever, that we felt it was more than a matter of passing interest, thus early in the season, to officially and definitely ascertain the exact condition of affairs.

It is with pleasure, therefore, that we are able to reassure all would-be Southern tourists of the absolute immunity from danger that they may enjoy should they, this winter, again feel the inclination for a visit to the sanitarily regenerated State of Florida.

LIGHT GYMNASTICS.

The article on "Light Gymnastics" (page 541) has been published in *THE ANNALS* because we felt that its recommendations were applicable not only to schools, but to the family. If the father or the mother of each family would form a home class of the little ones and put them through these various movements each day, (accompanying them in the exercises) for a few minutes, the time consumed would be well repaid by seeing their children grow into strong, healthy men and women, while they themselves would find their own health greatly benefitted by the part they would take in improving their children. Try it.

BUREAU OF INFORMATION.

We will, commencing with this issue, establish a "Bureau of Information" in connection with *THE ANNALS*, in which department of the journal we will answer inquiries bearing on hygiene, that may be addressed to us by our subscribers. We cordially invite such queries, but we must ask that those who write to us shall give their names, not necessarily for publication, but that we may know that it is a subscriber who asks the question.

CREDIT TO WHOM CREDIT IS DUE.

Our attention has been called to the fact that when publishing the circulars on the "Prevention of Typhoid Fever and Diphtheria (as issued by our Board), we neglected to state, as we should have done, that these circulars (as well as many others of great value) have been prepared by Dr. George G. Groff, of Lewisburg, a member of our Board.

NOTES AND COMMENTS.

BED-BUG EXTERMINATOR.—Blue ointment and kerosene, mixed in equal proportions and applied to the bedsteads is an unfailing bed-bug remedy, as a coat of whitewash is for the walls of a log house.

PROHIBITIVE DUTY ON ALCOHOL. The recent Anti-Alcohol Congress in Paris resolved that the Governments of the world should be asked to impose a prohibitive duty on alcohol, and exempt from duty tea, coffee, and other ingredients for temperance drinks.

UTILITY OF TEPID BATHS.—Sir Edwin Chadwick, at the recent health congress and exhibit at Hastings, England, expressed his opinion of the wonderful sanitary effect of bathing in tepid water. The German army, he said, had the lowest death rate of any in Europe, which he attributes to the fact that frequent bathing in warm water is compulsory.—*Ex.*

BACTERIA AND BACTERIA.—Replying to some remarks that were made about bacteria at the recent meeting of the A. P. H. A., Dr. George M. Sternberg very truly said that the popular fear of bacteria is based upon a misapprehension. The great mass of bacteria are harmless, innocent little bodies; it is only the specific bacteria of special diseases that are to be dreaded and shunned.

ALUMNI OF LITERARY COLLEGES. The American Academy of Medicine is endeavoring to make as complete a list as possible of the Alumni of Literary Colleges, in the United States and

Canada, who have received the degree of M.D. All recipients of both degrees, literary and medical, are requested to forward their names, at once, to Dr. R. J. Dunglison, Secretary, 814 N. 16th Street, Philadelphia, Pa.

SOFT WATER FOR BREAD.—Hard water contains too much limestone, and that causes bread baked with it to soon dry out. If you use soft water to mix the dough you get a much better article of bread, and one that will retain its freshness. A good plan is to set a cup of water in the oven when your bread is baking. This will enable you to get a softer bread and only half as thick a crust.

JELLY-FISH STINGS.—Sea-shore bathing is not, infrequently, rendered somewhat unpleasant by the presence of the jelly-fish that infest the shallow water frequented by the bathers. The sting of these animals produces a very annoying irritation. Dr. B. W. Richardson, of London, tells us that the application of a solution of one ounce of common washing soda in two quarts of water will speedily allay the "sting."

THE IMPROVED PHYSIQUE OF AMERICANS.—Mr. Edward Atkinson made the gratifying statement before the recent meeting of the A. P. H. A. that the physique of the American man instead of having deteriorated, as some croakers claim, has actually improved and is, to-day, equal to that of any nation and superior to the majority. Mr. Atkinson arrived at this conclusion by the aid of a voluminous correspondence with dealers in ready-made clothing throughout the country.

INDUSTRIAL HYGIENE.—A New Prize in Hygiene has been founded by the widow of the late Dr. Pier d' Hony, of Milan, in memory of her husband. The prize amounts to 1000 fr., which the Royal Italian Society of Hygiene will award for the best memoir on a question of industrial hygiene, special attention being paid to prophylaxis and precautions against disease, injuries and accidents of any particular field or fields of labor. The memoir must be in the hands of the Society by February 29, 1890.

CREMATION IN DETROIT.—The Board of Health of Detroit, Michigan, announces twenty-two cremations in the city's crematorium between December 14, 1887, and July 31, 1889.

The board endorses the crematory from a sanitary point of view, but is somewhat chary about recommending the process for other cases than death from small-pox. A law exists there which declares that bodies of persons who have died from small-pox cannot be removed for re-burial unless they have been previously incinerated.—*New Orleans M. and S. Journal.*

DRAM-DRINKING AND PHYSICAL DETERIORATION :—

The dram-shops of Paris have increased since 1880 from 24,000 to 29,000, and in the last thirty years the consumption of alcohol has been trebled.

When we read the above brief statement in a daily paper, the thought was suggested as to whether there was any relation, of cause and effect, between this deplorable fact and the physical decadence of the French nation, for it is but fair to presume that a proportionate increase of alcohol consumption holds good throughout France.

HYGIENIC ADVANTAGES OF THE ELECTRIC LIGHT.—Theoretically there is a great advantage in closed rooms in using the electric light instead of gas light, and practically it has been found in the Post Office Central Savings Bank in London that during the past two years, since the introduction of the electric lights into the building, there has been a marked decrease in the amount of time lost from sickness by the clerks and employees. They get rid of the undesirable products of combustion which accompany the use of gas lights, and they therefore have a purer air to breathe.—*Anti-Adulteration Journal.*

PRECAUTION FOR OVERCROWDING. Quite a stir has been occasioned in London recently by the prosecution of a landlord for overcrowding his tenement house. The landlord was prosecuted at the instigation of the health officers, was convicted and sentenced to fourteen days' imprisonment. Under another clause of the same act a tenant a few days before recovered a verdict of \$250 damages against a landlord, who refused to replace the bad drains on his premises. The tenant's wife and three children died in the house presumably as a result of the defective drainage.

FOOD COVERINGS.—It is a recommendation in the right direction, which, from the *Med. and Surg. Reporter*, we learn has been recently made, in Paris, that the use of old paper from magazines and newspapers for wrapping articles of food should be prohibited. Such practices may not be provocative of absolute disease, but neither will they favor a higher standard of health, nor is it an agreeable

practice from an æsthetic aspect. Such a legal prohibition, would, probably, in this country, be unconstitutional, but intelligent, refined persons should do all in their power to discountenance the habit.

SCIENTIFIC TEMPERANCE.—We have received from Dr. Orpha D. Baldwin, the Superintendent of Hygiene of the Womens Christian Temperance Union of Ohio, a most instructive as well as entertaining pamphlet on "Scientific Temperance." It is issued under the auspices of the W. C. T. U., of Ohio, and it is bound to do incalculable good because it is so full of scientific, practical, every day reasons why alcohol should be tabooed.

He who reads this "bulletin" and fails to become a temperance advocate must truly be a thick-headed individual.

LONGEVITY OF WOMEN IN HUNGARY.—Statistics collected by Fodor, and published in the *Deutsche med. Wochenschrift*, July 18, 1889, indicate that in Hungary the life of women is materially shorter than that of men. Up to the age of thirty years there are more women than men in the population; after this age the proportion falls from 109.7 per cent. to 85 and 95 per cent. at the ages of eighty and over eighty years. This condition is the opposite, he states, to that found elsewhere in Europe, where the proportion of living women to males is 105.5 per cent at thirty years of age, and rises to 144 per cent. after eighty years.

MUSTARD PLASTER.—Never place a cold mustard plaster upon a patient.

The shock is like a sudden plunge into cold water. Before you commence to mix the paste be sure you have all the necessary material at hand. First put a large plate where it can get warm, not hot. Then stir the mustard and flour thoroughly together before you add the water, which should be tepid, stir in enough water to make a paste about the consistency of French mustard. Place your cloth (an old handkerchief is best) on the warm plate, spreading the paste in the middle of it, leaving a margin wide enough to lap well over on all sides. Do not remove the paste from the plate until ready to apply. Place a folded cloth between paste and patient's clothing.—*Trained Nurse*, July, 1889.

THE CAUSE OF YELLOW FEVER.—So much unreliable matter finds its way into the columns of newspapers, and even of scientific journals, that one occasionally finds himself somewhat bewildered and rather doubtful as to just how much knowledge he really possesses.

Such has been the case with the causative agent of Yellow Fever, so that it is with a feeling of satisfaction that we learn that we can pen some reliable information in reference thereto. Dr. George M. Sternberg, of the U. S. Army, who has been officially investigating the disease for the past six months, in Cuba, says that his researches have not led to a positive demonstration of the specific cause of the disease, but he has isolated a considerable number of disease-producing germs from the intestines of yellow fever cases, and has strong hopes that one or more of these may prove to be the specific germ.

PRECAUTIONS AGAINST YELLOW FEVER.—It was a wise sea-captain, who, when his wife died of yellow fever, on a voyage from Rio to this port, placed her body in a tight wooden box, covered the same thickly with tar and buried it in the sand with which the vessel was ballasted.

Still wiser was Surgeon-General Hamilton (of the Marine Hospital Service), who refused to allow the body to be landed and shipped to Maine, until the assent of the States through which it would pass was secured. Say what croakers may, the prevention of disease is a living reality, and we are rapidly systematizing the work, with a lot of intelligent and enthusiastic officials as a big part of the system. Let the public learn to appreciate and heartily second our official efforts and the results will be astounding.

ROYAL LEPERS.—After having made out Francis I. and Henry VIII. syphilitics, the Russian emperors epileptic, the English scrofulous, the Bavarian imbecile, and the Spanish in the last stages of degeneracy, historical critics are discovering leprosy among kings and princes. A writer in *Notes and Queries* says; “There is, I think, no doubt that Henry IV. of England and Robert Bruce were lepers. About Henry III. I am not sure. But I have tried to discover any authority for what I am quite sure that I read some years ago—but where I cannot remember—that Adelia of Louvaine, second wife to Henry I., became a leper, and that was the real reason why, when a happy wife and mother, she left her second husband, William de Albini, to whom she was tenderly attached, and entered a convent.

THE VALUE OF SALADS.—Commenting on the enormous influence of diet on the preservation of health, *The Analyst* very truly says that eminent physicians have affirmed repeatedly that the requirement for their profession would be reduced to a minimum if people would only regulate properly their diet; and some have gone so far as to proclaim that nearly all diseases could be prevented and many of them actually cured by employment of the remedial agencies to be found in food. This journal then goes on to strongly urge that we should all cultivate the habit of using fresh vegetable salads at our meals. Without going into the physiology of the question, we can heartily endorse the remarks of our contemporary, believing that as the use of salads increase the prevalence of bilious and nervous derangements will proportionately decrease.

CAUSE AND EFFECT.—Of course, there is a cause for every effect, and so much of a true science is hygiene, that in many cases where the effect has been produced (in the shape of disease) we are able, at once, to assign the correct cause, thereby offering to the people the means of preventing a repetition of the disease. In no instance is the relationship between cause and effect better demonstrated than in the relationship that exists between organic decomposition, as a cause, and typhoid fever as an effect.

In fact, so strong is the relation, and so well is it recognized by intelligent persons that it is related of the late Dr. Charles Meigs (a most sagacious observer) that being once called into what was generally considered a most salubrious section of the country to

consult about a case of typhoid, he, at once, unhesitatingly asserted that the disease was due to some undiscovered accumulation of filth, because he knew that this particular effect could not exist without the presence of this special cause. His assertion was indignantly denied by the owner of the premises until a careful examination disclosed a mass of fetid trash gathered in an underground drain, the subtle emanations from which had undoubtedly permeated the air within the kitchen and other parts of the dwelling.

THE DISSEMINATION OF CONSUMPTION.—The Berlin correspondent of the *Medical Press* says: "I have already repeatedly alluded to the labors of Dr. Cornet, in the Hygienic Institute under the auspices of Professor Robert Koch, in regard to the dissemination and prevention of consumption. Being a Bavarian by birth, he some time back sent a copy of his publications to the Bavarian Government, with the request that they should put the correctness or otherwise of his views to the test. It was not to be expected that they should undertake an extended inquiry at the dictate of a private individual, but they did pass on the writings to the Ober Medizinal Ausschuss. The referent on the occasion, Professor Bollinger, has decided to enter on an investigation as regards prisons. It is notorious that a great number of prisoners, nearly one-third, die of consumption. Professor Bollinger has decided that they shall not die of consumption contracted within the prison walls, *i. e.*, if Koch's views on its cause are correct. For the future, all cells are to be disinfected as thoroughly as after cholera or the

plague. Further than this, all prisoners already consumptive or suspected of being so, are to be removed. All expectoration is to be disposed of in the way recommended by Dr. Cornet. The proposed experiment has all the appearances of being a crucial one, and the results will be watched all over the world with great interest.

MAYOR HUMPHREY OF CONCORD, (N. H.) ON HYGIENE.—One can scarcely pick up the report of the proceedings of any society without being well impressed with the fact that the means of preventing disease is, to-day, about the most popular subject in the land. A recent instance of this popularity is found in the course of his remarks of welcome to the New Hampshire Medical Society by the Mayor of Concord. After a few generalities, His Honor, said :

"It has been my privilege for the last few months to be associated more or less with the members of our board of health in their sanitary work in our city, and to know somewhat of their methods, so that I think I realize more than I ever have before the great importance of judicious sanitary laws, combined with a firm execution of the same ; so you will, I trust, pardon me for referring to it here. The urgent need now seems to be that there be a more *thorough education of the public* in this regard. Our citizens do not all understand that this being a free country does not necessarily permit them to keep their homes and their surroundings in such a condition as to endanger the lives of their own or their neighbor's families. I am pleased to know that the physicians are now, and have been, leaders in this work, and it is to be hoped that you will not fail to "cry aloud" at every proper time until you see such progress in these matters as is desirable. It seems to me that there are no municipal regulations of more importance here in Concord than those regarding the sanitary condition of our city."

A WARNING TO ROBERT GARRETT. When, after his prostration, while Secretary of the Treasury, Mr. Manning returned from a tour of Europe, and the papers announced that he was completely restored to health and would again enter the business arena, we felt compelled to doubt the accuracy of the statement, and we ventured to say that if Mr. Manning burdened his weakened system with the cares of business he would inevitably succumb to the strain. Mr. M. embarked in business and a few months thereafter he was buried.

Now, if newspaper reports are to be credited, Mr. Garrett, after a most protracted, severe and close struggle with death, has been restored to health and *will soon embark in business*. Now, with all the earnestness of which we are capable, we feelingly and from the heart say to Mr. Garrett, in great big letters, DONT!

It was, we are led to believe, the cares and anxieties of business that caused this good man's illness in the first case, and a resumption of these cares will likely produce a relapse from which recovery will prove more difficult than in the first instance.

Owing to his intimate connection with the great railroad interests of our country, Mr. Garrett ceases to be a private citizen, and becomes a public character, and it is because of this fact that we have felt warranted in bringing him before our readers, to point the moral that when no financial necessity exists, it is bad policy for a man who has been somewhat weakened by disease, to ever again take upon himself the cares of business.

Art, travel, literature, philanthropy, all the higher and pleasanter pursuits of life, can afford sufficient occupation

to the time and mind of a man of culture and wealth, like Mr. Garrett, without the necessity of business worry to harass and prematurely kill.

—
BEEF TEA.—In our last issue we had occasion to discourage the use of beef-extracts, but, since beef-tea (when properly made) is a most nourishing article, we will now allow Mrs. S. T. Rorer (*Med. and. Surg. Reporter*) to tell us how to properly make it:—

“Great care must be used in the selecting of meat for beef-tea, and that part of the meat is to be used which contains the greatest amount of nourishment. The piece best adapted for this is the “sticking-piece” (that part of the neck where the knife is thrust through in killing the animal), as here there is the greatest amount of blood in the part. The worst piece is the tenderloin. If the sticking-piece cannot be obtained, take the round. It is indifferent whether you use the upper part, which is the tender part, or the under side.

Take one pound of meat which has been well freed from fat, and chop it as fine as possible; add one pint of *cold* water; stir well; and allow to stand in a cool place for two hours. Stir the beef-tea, as it is soaking, every little while. Put in a farina boiler; but do not let it boil. For seasoning, it is better to add six whole peppers than the ordinary ground pepper. A bay leaf imparts an agreeable flavor, and may often be added with no harm to the patient. Salt is to be added just before taking from the fire. The fat that rises to the surface is to be removed with small pieces of white blotting paper. Keep stirring till the red color is changed to a slight white tinge, which will occur in about fifteen minutes. Then cover the kettle for a few moments and strain, pressing hard to get all the juices out.

It is wise to prepare beef-tea fresh every day, and never to hurry its preparation. Beef-tea is to be served icy cold or very hot; and to prevent the tea from cooling in being carried from the fire to the sickroom, it is wise to serve it in a metal tea pot, pouring the beef-tea into a cup only when the room is reached. Never warm up more than you in-

tend to use, and any quantity left over must not be poured back into the remainder of the tea. The fibrin settles to the bottom, therefore before re-warming, be sure that the vessel in which the beef-tea is kept, is well-shaken. When properly prepared beef-tea should not have a cooked taste like a soup, but should taste more like rare meat."

—
 AVOID QUARRELS.—If one would make it a rule never to take offense unless sure that offense was meant, how much less quarreling and how much more happiness there would be in the world. Health and happiness are very close relatives. He who is happy will avoid many of the causes of ill health, and is it not wonderful when we reflect, how much unnecessary and useless quarreling there is in the world? An exchange eloquently says:

"What absurd little things people quarrel about! What trivial matters cause ill-feeling in families. The mutton being roasted too little or the beef too much; an opinion about the temperature of the house or the style of curtains that ought to be bought for the front windows; the definition of a word or its pronunciation, are things that might be argued pleasantly about, but surely are not topics worth a quarrel when peace and good will are of so much importance in the home. A little ill-feeling is like a seed that may grow into a large tree which will shadow the whole house. Many a man and woman must look back with regret on the hasty word or the cold reproach which was the entering wedge that splits a household in two, and yet how few make a point of uttering the soft word that turneth away wrath! Quarreling is one of the original sins, I suppose, for the babies sitting on the floor will fall out over their toys, and one will push down the block tower that the other has built with great pains; and there will be a 'name called' and a 'face made' and a slap given, and mamma will be called to settle a quarrel, and no truth can be got at, for each is right in his own estimation, and each has been wronged by the other. So it is through life. A reasonable quarrel about

great matters may be settled, and the parties made friends again; but little tiffs about nothing are such foolish, intangible affairs, that reason can not overcome them."

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 GRAVEYARD PESTILENCES.—The *Sanitary Journal* reports that, at a recent meeting of the Scottish Burial Reform and Cremation Society, Sir Spencer Wells said: "In the cemetery at Ilford, connected with the city of London, nine thousand persons are buried every year. Think what a dreadful state of things that represents! Whether in coffins or wicker baskets, you have that enormous amount of material decomposing within a short distance of a large centre of population. I cannot doubt that if it goes on unchecked there will be some terrible pestilence, which will be worse than the plague of London, or the 'Black Death' of the Middle ages. We shall not only get diseases resulting from impure water and impure air, from the decomposition of dead bodies, but we shall get the propagation of specific diseases. As Pasteur has shown, the germs of these diseases are preserved in the burying-ground, and they are brought from the grave to the surface of the earth where they poison the grass that the cattle feed on and the water that they drink, and they spread the diseases from which the animals die. There was a remarkable instance in Yorkshire, where a number of scarlet-fever patients were buried in the church-yard. A part of that church-yard was closed, but was afterward included in the garden of the rector, who had it dug up, and the scarlet-fever from which those patients had died thirty years before broke out in the family of that clergyman, and spread to the surrounding houses.

There are many instances in which other diseases have spread in the same way."

COMMUNICATION OF CONSUMPTION.

An instructive case of communicated consumption is related by Dr. E. von Duhring, who states that a girl aged 14 years, sprung from a family uncontaminated with consumption, was in friendly relations with a young friend who died of consumption. At the time when this girl died the patient, E. Z., was in good health. Shortly after the death of the friend she removed the earrings which the other wore from the ears and fastened them in her own. The mother stated that the girl who had died had no wound in her ear, but E. Z. herself on the contrary, states that her friend had frequently blood and matter on her ear. The patient E. Z. herself had up to that time never worn earrings, although the ears had been bored for the purpose. Shortly after she began to wear earrings the hole through which they were fastened began to discharge freely, notwithstanding which she continued to wear them, and she had continued to wear them up to the time when Dr. Duhring saw her. It was on account of the condition of her ears that she was brought to him. He found her pale, somewhat thin, but well built and well developed for her age. Where the left ear had been pierced there was a shallow sore with undermined borders, and on the left side of the neck there was a slightly enlarged gland adherent to the skin, which was ulcerated on the surface and covered with a dirty scab. On removing the scab a somewhat abundant thin discharge escaped. On examining the lungs, there was dulness

detected in the left apex. Granulations removed with a sharp spoon from the wound in the ear showed the presence of tubercle bacilli. The further progress of the case was rapid, and at the time Dr. Duhring wrote his paper the patient was rapidly sinking from consumption.

THE URINE OF BUSINESS MEN.—

What strikes us as some extremely valuable suggestions to physicians are thus made in the *Medical Era* by Dr. Clifford Mitchell, of Chicago :

"The urine of the over-worked and over-fed American business man usually shows in the beginning, before any renal disease is actually present, the following characteristics: The total quantity of the urine for the twenty-four hours is greatly reduced, sometimes to half the normal quantity. The color is usually, therefore, darker than normal, and there is an abundant sediment in which urates, uric acid, and often calcium oxalate may be seen with the microscope. The urine being diminished in quantity, and the acidity relatively increased, the urates and uric acid cannot be held in solution as they ought to be. Estimation of the total quantity of urea will almost invariably show this substance to be diminished to a figure considerably below normal. Perceptible traces of albumin and sugar I occasionally find in the urine of hyperactive business men, but in many cases both these constituents are as yet absent. I say 'as yet,' for sometimes, if all warnings are unheeded, one or the other of these unwelcome visitors in time, may make its appearance. I regard persistent decrease in both fluids and solids of the urine of great significance in those who eat hearty and exercise little. It is not necessary that either albumin or sugar be present—there is enough trouble without them. When a man of average weight voids daily no more urea than we find in the urine of a delicate woman, or a bedridden patient, it is time to cry 'Halt.' I have found these patients with diminished urea and crystalline sediments have all sorts of aches and pains. Headache is a very common concomitant. Sleeplessness is another. If I could have

my own way I would estimate the urea in the urine of every patient in the country suffering from insomnia, or restless unrefreshing sleep. Not all insomnia is due to lithæmia, but many cases, apparently hopeless, could be helped were the conditions properly understood."

CONSUMPTION IN CALIFORNIA.—

We reproduce the following from the monthly circular of the California State Board of Health, issued by the Secretary, Dr. G. G. Tyrrel:—

"We have noticed with some apprehension the frequency with which Consumption is mentioned in our reports, which might convey an erroneous impression that the disease was increasing in the State among the rising generation. That this, in a limited sense, is true, cannot be denied, but is capable of satisfactory explanation when we take into consideration the fact that for some time past California has been extensively advertised in the Northern and Eastern States as the sanitarium of the world; its luscious fruits and semi-tropical verdure have been exhibited, and its 'glorious climate' so dilated upon, that a perfect exodus of diseased humanity has been precipitated upon us. Thus we find sufferers from tuberculosis in all its stages lounging in our hotel corridors, crowding our health resorts, filling our churches and assemblies, and scattering the seeds of death with every mouthful of saliva they expectorate so promiscuously wherever they are gathered together. To this influx of immigrants with diseased lungs may we attribute the apparent increase of Consumption in this State. The expositions upon our 'glorious climate' throughout the East has sent us an undesirable element in the population of any country. There is no longer any doubt of the contagiousness of Consumption, or of the fallacy that cure resides in climate. The climate of many parts of California will no doubt prolong the life of many consumptives, and, perhaps, arrest the disease in a few, but until we can afford to build sanitariums for the isolation of this class of patients, or erect hotels and devise pleasure resorts for their exclusive use, our State is better off without these immigrants. They disseminate a disease which practically

might be unknown under proper sanitary laws, increase our mortality returns, and lessen that high standard of health to which the State is capable of attaining, from its unsurpassed climate, its geological formation, and its possibilities of presenting a temperature suitable to the climatic wants of any constitution which the system may demand for the better preservation of its perfect health."

OHIO STATE SANITARY ASSOCIATION.—The Seventh Annual meeting will be held in Dayton, Ohio, November 21st and 22d, 1889, when papers on the following subjects will be read: "The Relations of Theologians to Sanitarians," by Dr. D. J. Snyder, Scio; "Sanitation *vs.* Medication," by Dr. S. P. Bishop, Delta; "Recent Advances in Etiological Science," by Dr. E. R. Eggleston, Mt. Vernon; "Sanitation in Small Villages," by Dr. Austin Hutt, Waverly; "Bodily Comfort as a Sanitary Object," by Dr. G. C. Ashmun, Cleveland; "Influence of Climate Upon So-Called Malarial Fevers," by Dr. Wm. Owens, Cincinnati; "The Cadaveric and Vital Alkaloids," by Prof. C. C. Howard, Columbus; "Will General Sanitation ever become Popular," by Dr. John McCurdy, Youngstown; "Address of Welcome," by Hon. A. D. Witt; Response to the Address of Welcome," by Dr. R. Harvey Reed, Mansfield; "Poem—Bacteria, or the Flies we Feed on and the Bugs that Kill us," by Dr. W. S. Battles, Shreve; "President's Address—1. The use of Pork; its relations to Scrofula and Consumption; 2. Mosaic prohibition of Pork as taught by the Scriptures, and the prejudices of most of the Ancient Nations to its use as food; 3. Description of *Trichina-Spiralis* and their dangerous effect on the human body," by Dr. D.

H. Beckwith, Cleveland ; "Food as a Therapeutic Agent," by Dr. Henry J. Herrick, Cleveland ; "The Best Food for Man," by Dr. J. D. Buck, Cincinnati ; "The Relations of Water Supply to Disease," by Dr. H. J. Sharp, London ; "The Necessity of Uniform Rules, Regulations, Reports and Records of Local Boards of Health," by Dr. F. Gunsaulis, Columbus ; "The Sanitary Teachings of the Bible," by Prof. T. Nelson, Delaware ; "The Hygiene of the Chronic Insane," by Dr. J. W. Scott, Cleveland ; Garbage and Night Soil Crematories from a Financial and Practical Standpoint," by Dr. Geo. I. Garrison, Wheeling, W. Va.

THE MIGHTY POWER OF A HAPPY MEDIUM.—It is with matters pertaining to health as it is with everything else in this world of extremes, that the ideal towards which we all should strive, but to which comparatively few attach sufficient importance, is the happy medium in everything. It is not alone excess in that which is undoubtedly regarded as injurious to health, that is, in reality so ; for it is eminently true that excess of any kind in anything is prejudicial to health and happiness.

Too much roast beef ; too much exercise ; too much sleep ; too much of any of the good things of life is not true wisdom. Yet, it is a fact that the majority of human beings are extremists.

But a few years ago the brains of our children were being developed at the expense of their muscles ; the reaction having set in, there is now grave reason to fear that we will so overdo the "physical culture" business as to make it absolutely injurious to health.

If we but intelligently read the

pages of history we must be inevitably led to the conclusion that to develop the highest possibilities of mankind, man must endeavor to cultivate and practice a happy medium in all things.

When Rome was the physical mistress of the world, so was she also the seat of the learning and wisdom of the world. Peering down through centuries of history we will always note this same fact until when, to-day, we admit that Germany is the most powerful of all nations, from a physical standpoint, we also know that the seeds of learning, planted during the reign of Frederick I, in the dawn of the 18th century, have been most assiduously cultivated. At every town one meets the soldier, but close behind follows the student of the arts of peace.

As with the State, so is it with the person. Individual excess usually implies general mediocrity. John L. Sullivan may be a marvel of brute strength, but he is far from being a *perfect man*. The "happy medium" in everything, is what we all should aim for and through its agency alone can we hope to attain the greatest perfection of which humanity is capable.

THE ESSENCE OF WISDOM.—The essence of wisdom consists in the cultivation of a habit of always seeing the best of everything. We once knew an extremely bright young physician who was accustomed to say that he had never seen a woman, no matter how ugly she might be usually regarded, in whom he could not see some beauty. We have since thought that this beauty was, probably, rather more in the viewer than in the viewed. Our friend was a happy, cheerful, contented young man, and, as a natural, reactionary sequence, his digestion was

good and his rest peaceful. His satisfied and contented mind would rather see the beautiful than the ugly in all upon which it looked, and this very seeing of the best side of all nature reacted back upon his mind so that his mental machinery was thereby well-oiled. Yet, this young man had a "hard road to travel." He was not overly-blessed with worldly goods, neither did he seem endowed, among his other gifts, with the ability to "make money;" so that he was happy, contented and peaceful rather in spite of than because of his material surroundings. We could all have this young man's traits *if we would*, with all the added health and happiness that such an acquired temperament would vouchsafe to us. We have the same idea expressed in Mr. Gladstone's recent remark, that if he had to select the best fifty years from the beginning of time in which to live he would choose the past half century. This great Statesman has looked upon the best and most beautiful aspect of all that has been and all that has occurred during his eventful life-time, and as a result we find him better pleased with that which he has seen and in which he has taken part, than, as is the case, with so many croakers, with the times, which, because of their remoteness, seem hallowed by a halo that is wanting to the eye of the cynic in that which he beholds.

When Oliver Wendell Holmes tells us that he would not give a fig for a man who was not possessed of more or less egotism, he does but give expression to this same idea, for he who is a healthy egotist is so because, doing to the best of his ability that which he does, he regards all that he does, all that he sees or hears and all that

others do from the brightest and most beautiful side, which naturally makes him a most genial, happy and contented companion. We can all acquire this delightful trait if we but so will it.

IMPORTANT TO FATHERS WHO SMOKE.—"May I give you my recent experience of tobacco-smoke? It may be a warning to others. I have one child, a little girl not two years old, who was as healthy as the birds when she was born. For more than a year past, ever since she was old enough to be less in the nursery and more with her father and me, she has ailed mysteriously. I could not say she was ill, yet she was hardly ever well. I was in a perpetual state of anxiety about her. The symptoms were absence of appetite, complaints of sickness, stomach and digestion out of order. Last August I took her to a country town, where we stayed two months. After the first week, she flourished like a young bay-tree, ate, and drank, and laughed, and played, and slept, and kept me forever busy enlarging her garments. I brought her home rosy and robust. In one week all the old symptoms reappeared—loss of appetite, dark lines under the eyes, listless ways, restless nights. Some one suggested that the neighborhood did not suit her; and I was cogitating how to take her away again, when she caught a severe cold and was confined entirely to one room for three weeks. She recovered her health completely. Appetite, spirits, sleep, all returned. It could not be the neighborhood. After her cold, she joined us downstairs again, as usual, two or three times a day. In less than a week, sickness, etc., returned, I was in despair. For

nearly three months, I racked my brains about drains, wall-papers, milk, water, sauce-pans, any and everything in vain—the child slowly wasted. The weather was too severe to take her away. In an agony of mind, I noticed one day that, so far from out-growing her clothes, as I expected, they were too large for her. The little thing was not eating enough to keep up her strength, and we could not coax her to eat. Yet she was not really ill; she ran about and played in a quiet way, and looked fairly well to those who had not seen her more robust. Suddenly my husband was summoned into the country. A week after he went, she began to eat with a relish. In a fortnight, she was her own happy self, full of riotous childish spirits. ‘Her father has never seen her like this,’ I remarked, one evening, when she was particularly merry and mad; and then the truth flashed upon me. It was his tobacco that upset her. He has been away now for a month; and the child’s limbs daily get firmer and rounder, and she is the merriest, healthiest little mortal possible. He always smoked after breakfast and after lunch, with her in the room, neither of us dreaming that it was injurious to her. But for his providential absence this time, it would never have occurred to me, and we might have lost our darling, for she was wasting sadly. It was acting like a slow poison.”

It seems to me probable, from the above history, that the child was confined to the nursery for the first few months, and not with the father when he was smoking, and was thus not affected so early as children often are. With rich people, in cities, the “smoking-room” saves children, infants at least, from early poisoning by tobacco-

smoke. But that thousands of infants in the homes of the poor in the small crowded houses of the alleys in cities, are sufferers from this cause is quite probable. People with consumption and other exhausting diseases are sometimes greatly nauseated by the odor of tobacco brought into the sick-room by a physician much given to the use of tobacco. I have several times heard them speak of its being very offensive to them.

As “a word to the wise is sufficient,” it seems to me quite proper to call the attention of the profession to this cause of disease, of suffering, and oftentimes of premature death.—*Med. and Surg. Reporter.*

NIGHT TERRORS IN CHILDREN.—In recent numbers of *The Medical Standard* and of the *Albany Medical Annals*, there have been communications in regard to cures of night terrors in children, in one of which the recommendation is inferentially made to use whipping as a cure. In general, however, the tone of the articles indicate that the writers regard night terrors as a genuine disorder, and one for which punishment is not a proper mode of treatment. With this latter view we strongly sympathize.

It is possible that occasions may arise in which a whipping—although it seems cruel at first sight—may do good and be justifiable, precisely as in other cases the infliction of pain is justifiable in view of the result to be obtained; at the same time, we think there can be no doubt that most men who think carefully on this subject, will agree that night terrors require very different handling.

Whoever has experienced these terrors in his own person, or who has

studied them in his own children, must feel deeply that they are a very serious and a very sad affliction, and that they call for the greatest amount of wise and kindly sympathy, and the most discreet management. In most cases they are associated with some chronic or temporary ailment. Indigestion, a catarrhal condition of the air passages which interferes with respiration, swelling of the tonsils, or of the substance of the walls of the air passages, and congestion of the meninges of the brain, constipation, or an overfilled bladder, are among the causes which give rise to night terrors. In treating them, of course it is necessary, first of all, to ascertain, if possible, the presence of such exciting causes, and to remove them, if present.

In addition to these there are various calmatives which are useful, some of these appealing to the mental, and some to the physical part of the sufferer. Among the former, light may be set down as in every respect the most important. Very often a flood of light will do more to reassure a frightened child than anything else; and to this should be joined the presence of those upon whom the child naturally relies—the parents, the nurse, or whoever is most loved and trusted. In addition to these, diversion is very important. Sometimes the production of toys, or games, or picture books, and often playing upon a musical instrument will serve a useful purpose.

These appeal directly to the mental operations; while, for physical impressions, a child may be made to drink some hot liquid, like milk, or what is called “cambric tea.” Medicines are of only comparative value. The bro-mides take so long to act, that it is hard to tell whether they do a little

good, or none at all. The administration of a sufficient dose of opium is sometimes useful, and it is by no means unwise to administer a full dose, proportioned, of course, to the age of the child, so as to produce sleep.

With all that may be done, patience, gentleness, tact and thorough sympathy with the state of mind and body of the child is of indispensable importance. No harshness of voice should ever be used, and, in our opinion, punishment is never justifiable.—*Medical and Surgical Reporter*.

MANAGEMENT OF GARBAGE IN LARGE CITIES.—Dr. Oscar C. De Wolf, ex-Health officer of Chicago, contributes an excellent article on this subject in the *Sanitary News* of October 12th. He says that thirty-five years ago preventive medicine consisted in trying to keep out disease by quarantine methods; now it consists chiefly in removing the conditions favorable to its existence and spread. The country is constantly pouring into the city the organic matter necessary to sustain the city's life. From the prairies of the West, from the fields and gardens of the South, from foreign lands, and from the seas loaded trains and freighted ships are constantly arriving and discharging the provision for the organic wants of the population. This provision is not all consumed, but a large residue remains, effete, putrefiable, dangerous, which, if not speedily cast out beyond the borders, or otherwise properly disposed of, is sure to produce a poison by its decomposition which not only directly affects the health of the community, but indirectly supplies a breeding place for the specific germs of disease

and stimulates them to great activity of development.

In the country vegetable growth makes use of this effete matter as a stimulant to other growth, reorganizing it into other nutritious substances. In the city this source of putrefaction is wanting; small accumulations from each family result finally in immense quantities from many families, which impregnate the soil, vitiate the air, and cling in putrid films to the walls of dwellings and to all exposed surfaces. Unless, therefore, a city is provided with the proper means to care for this refuse in a sanitary manner, the accumulation will work a steady and sure vitiation of all the avenues of life; and one of the great advances of sanitary science in the later years, along the lines of disease prevention, has been the successful effort to remove this filth from all its hiding places in alley and street, area and corner, and the indispensable provision to care for it and dispose of it by sanitary methods.

The custom of using garbage for filling low lots and old water courses within the limits of a city—and which were to be used as sites for dwellings—or feeding it to swine, was long continued, and is even now permitted in some localities, although such methods can receive nothing but the most emphatic condemnation from sanitarians. . . .

Rats are the peculiar vermin which swarm about kitchen garbage in all our cities, and if a man may harbor 100,000,000 of these trichinæ parasites—as Cobbold says he may—then a rat may possibly be infected with 1,000,000, which at a certain period of evolution of the parasite are lying free in the intestines of the rodent, and

which may be freely discharged from the bowels with the fæces. Is it strange, therefore, that hogs fed on city garbage are peculiarly liable to this dangerous infection, and are regarded with suspicion by sanitarians as food for man when thus fed?

The feeding of garbage to milch cows is also very objectionable from the sanitary stand-point. It diminishes the vigor of the animal and vitiates the secretion of the milk.

PÆDIATRICS AND PUBLIC HYGIENE.

—At the recent meeting of the American Pædriatic Society, the President, Dr. A. Jacobi, in his annual address, makes reference to this important subject as follows:—

“The most vital questions of public hygiene are most intimately connected with pædiatrics. It is mainly two subjects that attract the attention of those who take an interest in children. I allude to the school and to constitutional diseases. My remarks to-day can be but fragmentary, but still I must not, both in the interest of our science and human society, omit to emphasize the fact that it still appears that our schools are establishments organized to produce nearsightedness, scoliosis, anæmia, and both physical and intellectual exhaustion. Contrary to the treatment a colt receives at the hands of its owner, human society, or the State, permits or directs that the powers of a child should be rendered unfit for its future functions, physical, mental and moral, for these three are indelibly interwoven. It requires physical and mental education to fertilize the soil for the evolution of morals. Thus the physician, and especially he who makes pædiatrics his special study, is a pedagogue by pro-

fession. The question of school-house building and school-room furniture, the structure of bench and table, the paper and the type in the books, the number of school hours for the average child and the individual pupil, the number and length of recesses, the hours and duration of intervening meals, the alternation of mental and physical training, the age at which the average and the individual child should be first sent, have been too long decided by school boards consisting of coal merchants, carpenters, cheap printers, and under-taught and over-aged school mistresses; not, however, of physicians. The health and vigor of the American child in early years seem, according to Bowditch, superior to those of the European; why is the youth and maiden, particularly the latter, so inferior? Why is it that anæmia and neuroses eat the marrow of the land and undermine the future of the country by degenerating both the workers and the thinkers of the community, and the future mothers? If there is a country in the world with a great destiny and a grave responsibility, it is ours. Its self-assumed destiny is to raise humanitarian and social development to a higher plane by amalgamating, humanizing and civilizing the scum of all the inferior races and nationalities which are congregating under the folds of our flag. Unless the education and the care of the young is carried on according to the principles of a sound and scientific physical and mental hygiene, neither the aim of our political institutions will ever be reached, nor the United States fulfil its true manifest destiny. That destiny is not so much the political one of excluding Europeans from our continent,

North or South—for indeed the participation of European civilization in the gradual work of removing barbarism ought to be very welcome—but of raising the standard of physical and mental health to possible perfection, and thereby contributing to the welfare and happiness of the people.”

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HOW THE LEPROSY BEGAN IN HAWAII.—The Hawaiian consul in London sends an interesting sketch of the history of leprosy in Hawaii and the leper's island of Molokai. The first known case of true lepra (I cannot speak as to elephantiasis) occurred, he writes, in the islands more than forty years ago.

It has been supposed to have been introduced by a Chinese; but this was never established; and it may here be remarked that the ratio of leprosy among the Chinese resident is less than that among the natives. In twenty years the disease has attacked a large proportion of the Hawaiian population. In 1865 as many of the lepers as could be induced to go were taken to a beautiful valley in the island of Molokai, not to be called, as was that of Rasselas, a “happy valley,” but fertile and eminently adapted to its purpose. Before it was the ocean, and landward the plain was shut in completely by a mountain range, in which were precipices 2,000 feet high. Doubtless at first some disorder and a want of organization existed. But the Hawaiian Board of Health began its work and improved matters. Pure water was brought into the settlement from sources a mile distant in abundant quantities, and was distributed by exits in nine different situations.

In the year 1873 Mr. Ragsdale, a layman, gave an example of self-sac-

rifice by volunteering to act as superintendent of the leper asylum. He did efficient work there, but he did not live long. It is to be admitted that the housing of the sufferers was for some time bad and insufficient. Yet, in 1874, Mr. Widemann, President of the Board, asserted that, "in a material point of view, the people were better off in Molokai, than most natives of the islands, and also better, with few exceptions, than they ever were in their own homes. Parcels of land and wooden houses had been bought for the increasing population, and 6,000 feet of water pipe had been laid." Next the settlement was divided, and the two establishments of Kalawao and Kalaupapa were placed at a considerable distance from each other. In 1879 and 1880 there were in the former of these places 802 lepers, of which 458 were men and 344 were women. There has always been an excess of cases among the males. The largest number at any one time appears to have been 1,000. In the year 1874 the young Belgian priest Damien cast in his lot with that sad society, and was appointed assistant superintendent. The lepers cultivated plots of ground and occupied themselves in such manual labor as they were capable of.

The biennial grant of the government is \$100,000 for Molokai and \$35,000 for the establishment on the Island Oahu. There is a resident surgeon at Molokai.

The present king and queen have shown great interest in and sympathy with the lepers. Three years ago they paid a memorable visit to them, and a hymn written for the occasion by the king was sung enthusiastically by the patients. I have understood that the resident medical officer, Dr. Hoffman,

is himself affected by the disorder. I will add that the ratio of deaths in a year is 58 per 1,000 and the disease runs its course after first incubation in about eleven years. I need hardly say that all kinds of remedies are being tried on the sufferers, and I must express my thanks to the English government, who procured at my request from the government of India, a large quantity of Gurjun oil, which I forwarded to Hawaii. It has been thought that this oil is the most potent agent, if not for the cure, for the restraint and alleviation of leprosy.—*Jour. Am. Med. Ass.*

MUSIC AS A MEDICINE.—In an able article on music in *Science*, Oct. 11, 1889, Major J. W. Powell, says :

Disease and wounds, pain and death were the heritage of the early man. Whence these evils came he knew not ; why they came he could not tell. How they were to be driven away was the enigma of all savage thought. Through an illogical philosophy, the origin of which is a long and strange story, he came to believe that diseases were living beings ; that toothache is the pain wrought by the gnawing mythic worms ; that the cough is caused by mythic insects ; that headache is caused by invisible mythic ants ; and that all diseases and all pains are produced by these mythic agencies. And he tried to drive them away by shrill shrieks, by mad howling, and by horrid imprecation. Then he sought to gain the aid of the friendly spirits of the world, the good mythic beings. To him the rhythm of the dance and the chant was the language of joy. So he sought to woo these friendly spirits by using the language of joy ; and, when wearied with his own efforts at driving away

the maleficent spirits, he turned to the dance and the chant, and with them called for the beneficent spirits. In this manner the sylvan man came gradually to believe in the direct efficacy of dance and music as a medicinal agency. Dance and music are the quinine and calomel of the savage,—the “water-cure,” the “faith-cure,” the “blue-glass cure,” the “mind-cure,” the “Chistian-science cure,” the “youth-restoring elixir,” the panacea of all human ills. When the poor diseased people recovered, the joy of recovery became associated with music. The welcome to health and companionship which the poor invalid received was given in dance and music.

CONSANGUINEOUS MARRIAGES.—The following excellent editorial is from the *Med. and Surg. Reporter*. There is a widespread belief that the marriage of persons nearly related by blood is likely to result in offspring of imperfect physical and mental development. This, most medical men know to be true—not for the reason to which the result is usually attributed by the laity, but because consanguineous marriages concentrate in the offspring the physical or mental defects or weakness of the parents, as both parents are likely to have the same sort of defects or weakness, while in other marriages the risk of a coincidence of the kind is comparatively slight. But, real as is the danger in consanguineous marriages, the mere fact of consanguinity is not itself a danger to the offspring. There are many proofs of this in history, while an interesting addition to them may be found in a recently published book by His Majesty Kalakaua, king of the Sandwich Islands. This book is en-

titled *The Legends and Myths of Hawaii*, and is edited by Hon. R. M. Daggett, late United States Minister to the Hawaiian Islands. In it the statement is made that “In the royal families, to subserve purposes of State, father and daughter, brother and sister, uncle and niece frequently united as man and wife. The children of such unions were esteemed of the highest rank, and, strange to say, no mental or physical deterioration seemed to result from these incestuous relations.

CORRESPONDENCE.

ONE CAUSE OF SICKNESS AND DISCOMFORT, (IN MICHIGAN) LARGELY PREVENTABLE.

EDITOR ANNALS OF HYGIENE.—Owing to the drouth, fires, especially in swampy places, are numerous, and the atmosphere is usually smoky and irritating to the eyes, head, and air-passages. Some diseases are aggravated,* sleeplessness, nervous disturbance, general discomfort, and, I believe other serious troubles not commonly recognized as due to this cause, result, because the atmosphere is to a considerable extent, unfitted to properly sustain life. One apparent change in the atmosphere is to lessen, below the normal limit, the active oxygen; and this is especially true during the nights; thus, during the week ending October 19, no ozone could be detected in the atmosphere at Lansing on any

* During the week ending October 19, tonsillitis increased 50 per cent., pleuritis 33 per cent., inflammation of the brain 25 per cent., and membranous croup 25 per cent. Probably other causes than the ones here mentioned had influence, but the other atmospheric conditions were not such as to account for such increase.

night except one,—Wednesday. A sense of want of air,—even approaching suffocation, and a weakness of the circulation, in some approaching heart failure, has been noticed.

The object of this note is to ask attention to the fact that much of this discomfort and danger to health could easily be prevented if all persons would refrain from setting fire to rubbish, until after this bad condition of the atmosphere has passed. On some evenings dozens of such fires have been set in one small city in the interior of this State. As "the wind goes down with the sun" nearly all the irritating smoke and bad air from such fires built in the evening remain in the city or village, and must be breathed by the inhabitants.

If such fires must be made, it would be very much better to build them in the morning, because the movement of the atmosphere then usually increases until 2 P. M., and that may carry the foul and irritating air from such burning rubbish outside the city or village.

HENRY B. BAKER, M.D.,

Secretary.

OFFICE OF THE STATE BOARD OF HEALTH,
LANSING, MICH., Oct. 23, 1889.

SPECIAL REPORT.

THE MEETING OF THE AMERICAN PUBLIC HEALTH ASSOCIATION, WITH RUNNING COMMENTS THEREON.

The seventeenth annual meeting of this representative body of men and women interested in the subject of hygiene, was held in Brooklyn, N. Y., October 22d, 23d, 24th and 25th.

THE OVERSHADOWING OF OUR HOMES was a most important topic that was discussed, in the absence of the author of the paper, (Dr. W. Thornton Parker) by Professor Charles A. Lindsley of Yale College.

The truth was well stated when the author said that a soil loaded with roots and shaded from the sun is unfit to live upon. Free drainage, abundant sunlight and pure air in free circulation must be obtained by thinning out shade trees. We must note that the author says, *thinning* out, for, in the discussion which followed the reading of the paper, there were some who held that shade was not injurious to health; neither is it, any more than good roast beef, *in moderation* but *overshadowing* is as bad as *gluttony*; if our shade trees are thick enough to deny the sun-shine access to our houses, then we had better thin them out or we will have rheumatism, *malaria*, and pneumonia as the results. A happy intermingling of shade and sunshine is what we want, not too much of either.

CLOTHING IN ITS RELATION TO HYGIENE.

When a gentleman, whose physiognomy, as he rises to speak, bears evidence to the fact that his many years of professional experience have been to him a fountain of valuable information, we prick up our ears to catch some pearls of wisdom. Dr. James F. Hibberd, of Richmond, Ind., whose years of practical experience are worth centuries of theories, tells us that we do not dress properly, so that the functions of the skin may be normally carried on. Many dress too warmly and it would be much better were the clothing so arranged as to allow free circulation of air and proper ventilation of the exhalations of the skin, without too great loss of heat in cold weather.

We have, ourselves, often thought that the heavy and cumbersome clothing worn by so many in winter must be unhealthy. We must remember that animal heat is developed within the body and the use of extra wraps in cold weather is that this heat may be retained for the comfort of our bodies and not be immediately dissipated into the atmosphere. But, would it not be wiser to increase the amount of heat generated, which we can do by the use of fatty and saccharine articles of food combined with exercise, so that we will be comfortably warm in cold weather, without the exhausting burden of heavy coats and wraps. One knows what a sensation of warmth is produced by a brisk walk on a cold day; this is because the exercise has caused the generation of an extra amount of heat within the body. To repeat

therefore, a combination of diet and exercise may be wisely substituted for the heavy and burdensome wraps and coats.

CAUSES AND PREVENTION OF INFANT MORTALITY.

Dr. Jerome Walker, of Brooklyn, deplored the fact that, as he claims, the common belief that infant mortality in this country has diminished of late years is not sustained by statistics. In this, as in several other matters, there seemed to be, judging from the various remarks that were made, a wide difference between the experience of the observers of Brooklyn and New York City, not to be explained by any difference in the geographical relations of these cities, for apropos of this special subject of infant-mortality, Dr. Stephen Smith, of New York, who has had ample opportunities for observation tells us that there has been a diminution in this death-rate in New York City; which in the year 1869 was as 53 of the whole death rate, while in 1888 it had fallen to 42. It was stated that in Cleveland, Ohio, the infantile mortality among the Irish is comparatively low, while it is very high among the Bohemians, Poles and kindred races, whose infants sleep on little hair pillows and usually have similar appliances fastened about their bodies. The immunity of the Irish babies is attributed to the fact that they are nearly always out of doors, where they have plenty of air. Both Drs. Smith and Dr. Janes of New York, made, what seemed at first sight, the startling statement that infant mortality is less in the tenement houses of New York than among the better classes in that city. This seemingly paradoxical statement was comprehensible when attention was called to the fact that tenement-house babies are nearly always in the open air, while, at the same time they are not pampered, fed and confined to overheated rooms as are the offspring of the wealthy. The lever that is to raise the death-stone of ignorance from the lives of our little ones, according to the opinion of all who spoke on this most important subject, is *popular education* on the care of infants. Dr. R. O. Beard, of Minneapolis, Minn., who presented a most valuable paper on this subject, very truly said that the errors now common in the treatment of a baby in its cradle would suffice to kill a man. The dirty nursing bottle and tube, the mixed food left standing near the kitchen sink to

absorb foul sewer gases, the foul close atmosphere of baby's apartment, the almost universal inattention to the thirst of the child (a baby requiring water the same as an adult) the heavy, wearisome, life-destroying clothing with which the pride of the mother must deck her darling whenever it goes out of doors, all combine to make us feel that the reasoning of evolutionists who talk about the "survival of the fittest" is all bosh in connection with infant mortality and that we should rather speak of "those who are strong enough to live in spite of human ignorance or human carelessness."

The remedy, as we have said, is to be found, when those who have voluntarily assumed the responsibility of bringing into the world and raising children will come to consider it a sacred duty to inform themselves how to properly meet this responsibility. There is an abundance of literature on the subject.

FEEDING COWS ON BREWERY WASTE.

Dr. Walker told us the results of some experiments wherein it was demonstrated that while cows fed on brewer's slops, gave an increased supply of milk, yet such milk putrefied more rapidly and it was concluded that milk given by cows fed on pure hay is the best.

THE DWELLINGS OF THE POOR.

A philanthropic suggestion that would, no doubt, be financially profitable, is made in the address of Mr. Alfred F. White, C. E., of Brooklyn, when he urges the erection of sanitary dwellings for the poorer classes. This has been done in London, and the infant mortality in that city in 1888 was only 15.99 per 1,000, while in New York City it was 26.18 and even in Philadelphia, where our conditions are so much more favorable, it was 20.70 per 1,000.

INFANTILE DIARRHŒA IN THE SOUTH.

Dr. Maxwell, of Florida, called attention to a curious fact, the cause of which was not explained, that infantile diarrhœa is much less common in the South than in the North. Thus while the death rate from this cause in New Orleans was only seven in ten thousand, in Boston it is twenty-five, and in Chicago thirty-five in ten thousand.

LOCAL HEALTH OFFICERS.

Dr. George Homan's (St. Louis) paper on this subject, causes us to again urge, what we

must day after day, year after year, everlastingly and eternally urge that it will be a glorious day for the people when they become alive to the fact that well-paid health officers supported by intelligent, well framed and comprehensive health laws, are as much of a necessity to the common weal as well-paid sheriffs, court clerks, policemen or soldiers. This time is surely coming and the sooner the people become alive to the beneficence of hygiene the sooner will it arrive. It is a grievous error, into which many sanitarians fall, to claim that hygiene is not popular and to bemoan the fact that the people take so little interest in the subject. We are in a position to know whereof we speak and we positively assert that, wherever "it is rightly understood, hygiene is to-day, the most popular of all popular subjects. It is only where the word has been heard without an understanding of its meaning and significance that it is, *seemingly*, a neglected and unappreciated subject.

THE NEWNESS OF HYGIENE.

We must not forget that scientific, rational, intelligent hygiene is a thing of the present generation. This fact was well put in the "annual address" by the President of the Association Professor Hosmer A. Johnson of Chicago, when he said "The measures looking to the prevention of disease by the use of scientific methods are modern. The maxims of Hippocrates, the ceremonial of the Hebrew law as to bathing, and the establishment of quarantines, are almost the only exceptions. For the most part suffering has been regarded as an infliction of the gods, or among Hebrews and Christians, as a dispensation of Divine Providence. The accounts we have of the pestilence of Egypt and the plague of Athens in the earlier centuries, and the visitations of Florence, London, and other cities in modern times, illustrate this tendency of the human mind in the midst of its sorrow to turn to the supernatural. Sacrifices among the Pagans, fasts and discourses upon the terrible judgments of God among the Israelites and Christians, have been regarded as among the most efficient means for the arrest of the scourge. The profession of medicine in olden times could do but little in the way of educating people in better methods and in leading them to the use of more efficient measures for the maintenance of public health. In fact, we find the most diverse

opinions held by the masters of the art of healing, as to the nature of disease itself, its causes, and consequently the modes of its prevention.

A few facts in the sanitary, or rather unsanitary, history of London during the Seventeenth Century are suggestive of what was in all probability taking place over all the civilized world. These facts also give us a satisfactory explanation for the slow growth of the population of that century, as compared with the Nineteenth. In 1625, a writer said: "The plague caused the death of 5,000 a week during a part of the summer." In 1665, July 16, he wrote: "There died of the plague in London this week, 1,100." In the week following 2,000. August 8, he writes in his diary: "Died this week in London 4,000." August 15, the same summer: "There perished this week 4,000." He seems to have left the city for awhile, for on Sept. 7 he says: "Came home; there perished nearly 10,000 poor creatures weekly."

Sydenham, a very reliable medical authority, says of the same summer: "There died in one week 8,000, while two-thirds of the population were out of the city." The population is not certainly known, but probably at the time referred to was not over half a million, as it was only something over 800,000 at the beginning of the present century. Smallpox also ravaged the cities of Europe in winter, while plague decimated them in summer. In 1695 a reliable writer (Pepys) says, casually, in the discussion of other subjects: "The deaths were from smallpox increased to 500 more this week than last." What should we think in Brooklyn to-day with 500 deaths more this week than last from smallpox, with the probabilities that last week the number had reached into the thousands? But for vaccination, such might be our experience. Smallpox was always present and caused the death of one-sixth of the population of all the larger cities. The death rate was greater than the birth rate, and the population of London and other cities was maintained by a constant influx from the provincial districts. During all this time the means of communication were few and *a priori* we should not expect contagious diseases to spread with anything like the degree of rapidity made possible in this age of railroads and steamships.

How much the death rate has been reduced

in England in the last two hundred years we do not certainly know, but there is reason to believe that in London it has diminished from 40 or more in the 1,000, at the beginning of the present century to about one-half that number. The plague is a grim spectre of the dead past. Smallpox is a Samson shorn. The increase in population has been correspondingly rapid. I think we may safely infer that the diminution in the death rate and the increase in the population throughout Great Britain has borne some proportion at least to what has been accomplished in the metropolis. This increase of population has taken place notwithstanding the fact that during the last half century millions have come from the British Isles to our own shores, while yet other millions have found other lands.

Professor Tyndall very justly says in the preface to his essays on "Dust and Disease," and other papers: "On public sympathy the sanitary physician has mainly to rely for support in a country where sanitary matters are left so much in the hands of the public itself as they are in England," and he might have added, in the United States. "But," he continues, "sympathy without cause, that is, without some basis of knowledge, is hardly to be expected."

Tyndall and Huxley, with a host of co-workers in every department of knowledge, have done much to supply this cause of sympathy, this base of knowledge. With the development and growth of one new science in these later times, with a better knowledge of the conditions of life and the modes and means by which it is modified, another new science has been brought into existence.

A death from typhoid fever now means not so much a dispensation of providence as it means foul water, foul food or foul air. A city is decimated by a pestilence, and it is found that its foundations are honey-combed with cess-pools, and its drinking water is diluted sewage. The judgments of God, in the light of these revelations, become no more mysterious than the pains of the child that laughingly thrusts its tiny fingers into the brilliant flame only to feel the terrible infliction that follows. There has come to be an enthusiasm in the medical profession on this subject which has made itself felt in various ways. This zeal has communicated itself to the public. It is contagious, if I

may use the term. It is well known that some diseases are communicable, but only to those who have what has been called a susceptibility to them. So it is with these notions about health. The public has become susceptible as it never was before.

It is not many years since an effort to instruct the public in the management of their own homes, such as wells, cisterns, cellars, drains, light and clothing, especially any intimations that kitchens, alleys and out-houses were filthy, would have been regarded as an impertinence. What the physician could not prevent, therefore, he contented himself with an effort to cure. Such suggestions are now gratefully received and are made the basis of action."

This last paragraph is eminently true and was never better demonstrated than in the State of Pennsylvania during the past Summer when so many portions of the State were fearful of the pestilential sequences of our terrible floods. Everywhere the health officials were those to whom the people looked, and their suggestions were received with a welcome and acted upon with an alacrity never in the previous history of the world accorded to any utterances save those of the divinities of the benighted pagans.

HEALTHY EMPLOYEES DO THE BEST WORK.

We must take exception to the statement made by Professor Johnson that "the egotism that leads manufacturers and others engaged in the various industrial occupations to ignore, in their eager pursuit of wealth, the public welfare, will always be an obstacle to the enactment and execution of health laws," for, our own experience teaches us that manufacturers and corporations employing large numbers of persons are rapidly finding out that healthy persons will do healthy work, and the importance of what might be called

INDUSTRIAL HYGIENE

is being actively appreciated by them; in addition to which, as Professor Johnson so truly says, "the general enlightenment on the part of the public which we so confidently look for, will compel obedience to these as well as to other forms of police regulations."

LOCAL HEALTH AUTHORITIES.

We are heartily in accord with Professor Johnson, when he says that "there should be in every town or city or district a health

authority. Under the direction of this authority there should be a survey first made with a view to determine the presence or absence of the physical conditions that unfavorably affect health. This study should include not only the natural conditions, such as the climate, soil, exposure to sun and air, neighborhood, including water, wood and elevation, etc., as suggested by Hippocrates many centuries ago, but it should also embrace the condition of the population, their nationality, occupations, dwellings, density and food. It should also show the methods of removal of accumulations, and in the more populous districts the disposal of sewage, the conditions of streets and alleys, and the character of drinking water. There should also be noted any special industries by which air or water may be contaminated. The bearing of most of these different industries upon public health is now well known. In addition to these studies there should be a careful collection and preservation of the statistics of births, deaths, marriages, the prevailing diseases, the causes of death, and the increase or decrease, if such be the case, of population. This is only a suggestion of a few things that should be done, and these should be done in the smaller towns and villages as well as in the larger cities. With a knowledge of these matters, intelligent measures could be taken to reduce to a minimum the evils that grow out of our gregarious necessities. These health organizations of the smaller corporations, such as towns and villages, should be brought together by the county or by the State. By the larger bodies there should be secured uniformity of methods of procedure, such as the registration and classification of statistics. Information should be exchanged in this way as to the sanitary condition of communities. Concerted action should be taken for combatting a common foe. How far this has been realized many of you perhaps know, or, rather, many of you know how far short of this realization we are to-day. We have in the most of our large cities as departments of government, Health Boards or Commissioners of Health. In some States we have general laws looking to uniform modes of registration and procedure. In a large majority of the States of the Union we have State Boards of Health, all created within the last

few years. That more money and care should be given to preserve the lives of our cattle than of our men, women and children seems strange. The Government carefully looks after the one and carelessly neglects the other.

"As typhoid fever is a greater calamity than Texas fever, as Asiatic cholera is more to be dreaded than hog cholera, so do we need a Department of Public Health more than a Department of Agriculture; a bureau of vital statistics more than a bureau of animal industry."

CONCEALED PLUMBING DEFECTS.

A world of wisdom was covered by the remark of the Hon. Seth Low, ex-Mayor of Brooklyn, who, in the course of an allusion to the Health Exhibition (in connection with this meeting), said that he had heard that the sanitary exhibition now being held under the auspices of the association displayed some excellent samples of the plumbers' work. He feared though that they were simply that portion of work as really seen by the public. What he would like to see exhibited was that which was concealed and brought disease and sorrow to many families.

THE RESULTS OF OUR WORK ON FUTURE GENERATIONS.

In the course of his "Address of Welcome," the Hon. Alfred C. Chapin, Mayor of Brooklyn, called attention to the fact that the health of the present generation will bear fruit in its descendants and succeeding generations will owe us a debt of gratitude for our efforts in securing their health.

THE UNITED STATES CENSUS IN ITS RELATION TO SANITATION.

From Dr. John S. Billings, of the United States Army, we learn that one of the most important questions in the vital and social statistics of this country relates to the fertility, longevity, and liability to certain diseases of those partly of negro and partly of white blood, and the only way to obtain data on this subject is through the registration of vital statistics. For all cities of ten thousand inhabitants and upward it is proposed to collect as complete information as possible with regard to altitude, climate, water-supply, density of population, sewerage, proportion of sewered and non-sewered areas, and other points bearing on the health-

fulness of the place which will permit of interesting comparisons with the death-rates. The cordial co-operation of all physicians and sanitarians is solicited in making the data of these reports accurate and complete. It is desired to make these vital statistics an unanswerable argument in favor of systematic public sanitary work and of the granting of State and municipal funds necessary for maintaining such work.

IMPROVEMENTS AT THE NEW YORK QUARANTINE STATION.

Dr. Wm. M. Smith, the Health Officer of the port of New York, who read a paper on this subject, illustrated by stereopticon views, began with the history of the earliest establishment of a quarantine station in New York, and went on to describe how the present grounds were taken up for that purpose. Illustrations of the ground plans of the buildings were thrown on the screen, and the speaker explained how the drainage and sewerage of the island were constructed; how patients suffering with contagious diseases were enabled to enjoy an outing without coming in contact with any of the other patients. Then the methods of disinfecting were explained, and views of the various chambers used for the purpose were shown.

The Association then adjourned and proceeded to take an excursion to the Quarantine and East River hospitals, accompanied by Dr. Smith.

THE PREVENTION OF CONSUMPTION.

Dr. Ezra M. Hunt, the Secretary of the State Board of Health of New Jersey, Dr. E. Plater of Ottawa, Canada, and Dr. P. H. Kretzchmar, of Brooklyn, read papers on this important subject, and they were well discussed. The important points established were that those who know that they are victims of consumption or who have any reason to suspect that they may have the disease, should avoid promiscuous and indiscriminate expectoration, that is to say, they should expectorate not on the floor but into a receptacle that may be disinfected; in this way the seeds of the disease may be destroyed instead of being carried, when the expectoration has dried, by the atmosphere, to some individual who will present a suitable soil for their development.

OCCUPATION FOR CONSUMPTIVES.

Those who have the disease or a tendency

towards it should never engage in any indoor occupation.

LUNG EXERCISE.

A most important means of prevention, we believe, was referred to by Dr. E. Plater, when he suggested systematic lung exercise. It was noted by Dr. Kretzchmar that a long, flat chest was usually the condition found in those who are victims of consumption, and this shape could and can be altered to a shorter, convex chest, by a system of forced filling and emptying of the lungs; by deep inspirations and prolonged, deep expirations carried on in the open air.

DESTRUCTION, RATHER THAN ISOLATION.

It has been suggested by some authorities that those afflicted with consumption should be isolated from their fellows, because of the contagious nature of the disease. This, Dr. Kretzchmar justly and humanely thinks is a very unnecessary and inhuman procedure, instead of which he recommends the destruction of the seeds of the disease as already mentioned.

During the discussion which ensued on this subject we were glad to hear Dr. J. F. Hibberd, of Richmond, Ind., emphatically assert his belief that the best means of protection against germ diseases is to be found in so maintaining the general condition of the body that it will be able to resist the action of the germs even should they find access thereto.

We have on several occasions urged this view. Two conditions are necessary for the production of a germ disease; first, the germ or seed, and, secondly, the existence of a soil congenial for its development. The seeds are so universal, so insidious, so invisible, that it is a difficult matter to avoid them, but if we always thoroughly maintain the standard of bodily health (which each individual has it in his own power to do), then it will matter little (comparatively speaking) how prevalent may be the seeds as the condition requisite for their development will be wanting.

THE ART OF COOKING.

Elsewhere we print an abstract of an important paper on this subject by Edward Atkinson, LL.D., of Boston, and we thus largely reproduce his paper because the personnel of the author forced us to believe that he must be very familiar with *practical*

sanitary cooking, for we have rarely looked upon a jollier, happier, more contented or healthier looking man than Mr. Atkinson.

THE CAUSE OF YELLOW FEVER.

The essence of Dr. George M. Sternberg's paper on this subject was that he has not yet discovered the cause of yellow fever, but that he believes himself to be in a fair way of doing so.

THE DISPOSAL OF GARBAGE.

One of the most vital questions in large cities, and indeed in every household, to-day, is the harmless disposal of garbage. This subject was discussed by Dr. R. Martin, the Health Commissioner of Milwaukee, Dr. S. S. Kilvington, the Health Commissioner of Minneapolis, and many members of the Association, but, unfortunately, no definite conclusions were reached. A committee, appointed at the last meeting to investigate the subject failed to make an official report; the committee was continued, with instructions to finally, definitely and officially report at the next meeting.

Dr. Kilvington told us some very interesting facts, demonstrating that our older and larger cities may learn many valuable lessons from their smaller and newer brethren of the West. Dr. K. seems to be the right kind of a health officer for he does not let his evident enthusiasm for hygiene run away with his judgment. There are no costly contracts for garbage removal in Minneapolis; on the contrary, like the waiters at the Grand Café, in Paris, he who would remove the garbage of Minneapolis must pay well for the privilege thereof. Each collector pays for his license to do the work and this license must be exhibited on numerous occasions. The route of each collector is known and watched, and if any garbage drops on the street it is an easy matter to detect the party who is responsible therefor. The refuse of a city has in it most valuable materials, and it is but right that its removal should prove rather a source of revenue than an expense upon the community. New York wastes many thousands of dollars annually by dumping its garbage into the lower bay, to say nothing of the extreme sanitary dangers involved in this barbarous and offensive practice.

FOOD IN ITS RELATION TO HEALTH.

Americans eat more than is required for

the maintenance of health, was the pith of the paper read by Prof. W. O. Atwater, of the Department of Agriculture at Washington. The paper was a most exhaustive and admirable scientific dissertation on this important subject.

SULPHUR AS A DISINFECTANT.

If any man ought to have a *practical* acquaintance with the merits of various disinfectants, that man, surely, is Dr. Cyrus Edson, for he holds, and has held for some time, the position of Chief Inspector of the New York City Health Department. Dr. Edson believes in the efficacy of sulphur as a disinfectant, and his statement of this fact gave rise to a useless discussion that consumed much of the valuable time of the Association. A useless discussion, we say, because this subject has been already thoroughly investigated and officially reported upon by a most efficient committee of which Dr. George M. Sternberg was chairman.

The facts seem to be that sulphur may be relied upon to destroy the germs of scarlet fever, measles and small-pox, but not those of diphtheria. Dr. Durgin, the Health Officer of Boston, stated that he had used sulphur as a disinfectant for twenty-two years and he was emphatic in his endorsement of it.

Dr. Sternberg says that sulphur will not destroy the germ of erysipelas. In New York City, the method now pursued by Dr. Edson, consists in burning a mixture of $\frac{1}{3}$ flowers of sulphur and $\frac{2}{3}$ stick sulphur for about six hours to disinfect a room after a contagious disease, while the clothing and all removable articles that have been exposed to the poison of the disease are removed to be disinfected by dry heat. The proper way to use sulphur is to place it in a receptacle which shall be placed in a tub of water and the sulphur ignited by means of hot coals or having saturated it with alcohol, it can be fired with a match. The water in the tub will add to the efficacy of the sulphur, but if woollen fabrics about the room happen to be wet, they will be ruined by the fumes of the sulphur; not so if they are dry. We should burn three pounds of sulphur for each 1,000 cubic feet of space in the room to be disinfected. Dr. Edson likes to leave all furniture and hangings just as they have been during the sickness so that the disinfection

may reach them just as the infection has done.

SANITARY ENTOMBMENT.

Rev. Charles R. Treat, of New York City, not only presented a valuable and interesting paper on this subject, but he set an example to all sanitarians and sanitary associations who would interest the public, by the way in which he handled his subject. Naturally, a fluent and pleasing speaker, Mr. Treat called to his aid the stereopticon, the combination making an address which no one who heard it will ever forget.

The speaker while earnest and uncompromising in his condemnation of earth burial, whereby the soil is poisoned, yet was mindful of the sentimental objections to cremation. His plan recommends the erection of handsome, imposing, solemn and suitable buildings, wherein little recesses or spaces are provided for the reception of bodies. Then a current of air is made to pass over the body so that it is dessicated or dried up, as it were, thus artificially bringing about the condition that is naturally produced by the peculiar atmosphere of certain portions of the world. A building 200 by 300 feet could be made to provide accommodation for 30,000 bodies. There is absolutely nothing revolting about Mr. Treat's suggestion. The funeral can take place in the usual way and the body laid to rest in a handsome sepulchre that will prove but pleasant to the feelings of the survivors. No possible pollution of the soil can, in this way, take place. This idea meets all the objections to earth burial and has none of the features that have been urged against cremation.

THE SANITARY NECESSITY FOR THE ANNEXATION OF CUBA.

We all know that yellow fever is continually menacing the southern sections of our country and that this danger is because of our proximity to Cuba, where, owing to frightfully insanitary conditions this disease is, practically, always present; but we are not so familiar with the facts brought out at this meeting by Dr. Benjamin Lee that from this same cause Cuba is the cradle from which small-pox and, (horrible to say) leprosy are being introduced into our country. The conclusions reached in Dr. Lee's paper, may be thus summarized:—

1. The exigencies of traffic and travel, render rapid and constant communication

between the United States and Havana a necessity.

2. Havana is one of the most notorious breeding places of yellow fever, and is never free from its presence.

3. The only means by which the germs of this disease can be eradicated, are a proper system of sewerage and drainage, which shall deliver the filth of the city at a distant point into the waters of the ocean, and the removal of all the feculent soil.

4. There is no hope that the Spanish Government will ever undertake a work of this magnitude for a dependency.

5. The introduction of yellow fever into the United States through both legitimate and illegal channels of trade must be of frequent occurrence, so long as this condition of things continues.

6. A single wide-spread epidemic of yellow fever would cost the United States more in money—to say nothing of the grief and misery which it would entail—than the purchase money of Cuba.

7. The precautions against the spread of small-pox in Cuba are entirely inadequate and are rendered ineffective by reason of the superstition of a large proportion of the inhabitants. Hence epidemics of that loathsome disease are of frequent occurrence.

8. Leprosy prevails in Havana and the Island of Cuba to a serious and constantly increasing extent.

9. Leprosy is absolutely unrestricted in this island. While there is an immense and admirably administered Leper Hospital in Havana, its inmates go and come among the residents of the city and country at will, until locomotion is rendered impossible by mutilation.

10. The ravages of the disease are confined to no class or race.

11. Leprosy has already obtained a foothold in the United States in the ports nearest to and in most constant communication with the Island of Cuba.

12. Leprosy has but one history, that of constant progression unless it is checked by isolation of the most absolute and unrelenting character.

13. No centre of leprosy has ever originated in the United States. The importation of the first case of a series can always be distinctly traced.

In view of these dangers, which to us seem

very real, Dr. Lee, we think, very wisely offered a resolution to the effect that this association should respectfully urge upon the President of the United States the expediency of opening negotiations with the Spanish Government with the view of an amicable transfer of the island of Cuba to the United States. In this way, and in this way alone, does it seem that we might metamorphose this hot-bed of disease into a delightful garden spot of health. This resolution was, by virtue of a rule, (the reason for the existence of which we fail to comprehend) referred to the Executive Committee and received back from them with the report that it was not in the province of this association to make such a recommendation. We started this report with the assertion that "The American Public Health Association" is the *NATIONAL Representative Body of Sanitarians* in this country, and we would now ask that if it is not the province of such a *national* association to make recommendations to the *National* authorities on questions of *national* importance, affecting the *National* health, then whose province is it to so do; and we would refer this conundrum to the Executive Committee for a solution.

At the same time we would like to suggest an alteration in the method of electing new members. As now conducted, the Secretary of the Association makes the statement that a list of applications for membership, which he holds in his hand, has been favorably acted upon by the executive committee, (he does not read the names) and he moves that the President, by virtue of the power confided to him, declare these persons elected members; the President does so, no names are read and the applicant for membership is left in doubt (as we now know that several are) as to whether he has been elected or rejected.

This association seems to have modelled after the Electoral College system, so far as the election of its officers are concerned; the advisory council (consisting of one member from each State, *such members not being elected by the association but appointed by the President*) nominate the officers and the Secretary casts a ballot for the officers so nominated. Practically speaking, the association at large, has no voice in any of the legislation of the association, the President

having the appointing power of the Committees, who in turn have the power to control all the work. This is all right, we have no doubt, but it strikes an observer, at the first blush, as a somewhat peculiar and original plan.

Dr. Henry B. Baker, the Secretary of the Michigan State Board of Health was elected President of the association for the ensuing year, Dr. Frederick Moutizembert, of Quebec, 1st Vice President; Dr. J. H. Raymond, of Brooklyn, 2d Vice President; Dr. Irving A. Watson, of New Hampshire, Secretary; and Dr. J. Berrien Lindsley, of Tennessee, Treasurer.

The next meeting will be held in November, 1890, at Charleston, S. C.

In connection with the meeting of the A. P. H. A., an exhibition of Sanitary goods is now being held in Brooklyn, where it will continue open throughout the month of November. In our issue for December we will publish a full, illustrated report of this exhibition.

BUREAU OF INFORMATION.

DISEASE GERMS IN ICE.

In reply to a correspondent who asks information on the subject, we would say that freezing does not destroy disease germs, and that there is a real danger, therefore, to be apprehended from impure ice. If we use ice derived from the Schuylkill river, we will be just as liable to Typhoid Fever as though we were to drink Schuylkill water.

INGROWING TOE-NAILS.

Pater. If your child shows a tendency towards ingrowing toe-nails, you must be very watchful that the shoes are loose in fit. Nothing will so increase this tendency or foster it, when it exists, as tight shoes, particularly those that are too short.

THE FREE USE OF WATER.

Drinker. No; we would say, as a rule, that if you use pure water, you cannot drink too much. Ordinarily, spring water will be cold enough, without ice, and when this is the case, it is best not to use ice. If, however, the ice be pure, we do not think there is much in the popular idea that ice-water is unhealthy.

STATE BOARD OF HEALTH

AND

VITAL STATISTICS,

OF THE

COMMONWEALTH OF PENNSYLVANIA.

SECRETARY,

BENJAMIN LEE, M. D., of Philadelphia.

MEMBERS,

PEMBERTON DUDLEY, M. D., of Philadelphia.

J. F. EDWARDS, M. D., of Philadelphia.

J. H. McCLELLAND, M. D., of Pittsburg.

HOWARD MURPHY, C. E., of Philadelphia.

GEORGE G. GROFF, M. D., of Lewisburg.

S. T. DAVIS, M. D., of Lancaster.

BENJAMIN LEE, M. D., of Philadelphia.

PLACE OF MEETING,

Supreme Court Room, State Capitol,
Harrisburg, unless otherwise ordered.

TIME OF MEETING,

Second Wednesday in May, July and Nov.

EXECUTIVE COMMITTEE,

PEMBERTON DUDLEY, M. D., Chairman.

HOWARD MURPHY, C. E.

JOSEPH F. EDWARDS, M. D.

BENJAMIN LEE, M. D., Secretary.

Place of Meeting,

(Until otherwise ordered).

Executive Office, 1532 Pine St., Philad'a.

*Time of Meeting,*Third Wednesday in January, April, July
and October.*Secretary's Address,*

1532 Pine Street, Philadelphia.

Bureau of Registration and Vital Statistics.

Department of Internal Affairs,

State Capitol, Harrisburg.

*State Superintendent of Registration of
Vital Statistics.*

BENJAMIN LEE, M. D.

THE STATE BOARD OF HEALTH AT
JOHNSTOWN.

OFFICIAL HEALTH BULLETIN, No. 9.

STATE BOARD OF HEALTH, }
JOHNSTOWN, PA., Oct. 12, 1889.

In issuing this, its last bulletin in reference to the health of Johnstown and the Conemaugh Valley, as affected by the great flood, the State Board of Health has its most serious obligation yet to perform—that of urging upon the people in the most emphatic manner the necessity and the duty of becoming themselves the protectors of the public health. If the success which has attended the efforts of the Board to prevent the occurrence of a pestilence such as has invariably followed like disasters in the past, has impressed upon their minds this lesson: That accumulations of decomposing animal and vegetable matter near human habitations are always dangerous and never to be tolerated, and that in thickly settled regions the only way to avoid such accumulations is by the creation of specially constituted authorities charged with the duty of their prevention and removal, clothed with full power and provided with sufficient means to enforce their own regulations—the direct and immediate benefits which its presence here has conferred will be trifling compared with the far-reaching good which will have been thus indirectly accomplished. If, on the other hand, the effect of the assistance rendered by the State has unfortunately been to lessen the self-reliance of the citizens, leading them to look outside for the performance of a function of self-government which belongs rightly to themselves alone, then the greatest work ever undertaken by a State Board of Health will have been prosecuted in this valley with the results which will be far from an unmixed good. If the simple precautions which the Board have been exercising in the matters of sanitary inspection, disinfection, and the removal of garbage are at once dropped, the Board will not hold itself responsible for the consequences. The municipal authorities of all the boroughs lying along the Conemaugh and Stony Creek rivers should unite in constituting a Board of Health, to which should be confided the protection of the health of the entire district. The organization of this Board should be on the plan authorized by the Legislature for

cities of the third class. It should consist of five of the most intelligent and reliable citizens, appointed without reference to locality or political preference, whose term of service should be limited only by their failure to properly perform the duties of the position. Such a Board, adopting the model ordinance of the State Board of Health as its code, and faithfully executing its provisions, would speedily become a pattern for all sanitary organizations throughout the commonwealth.

The Board feels that it may well congratulate the citizens on the standard of health which has been maintained during the trying period in the face of so many adverse influences. Their cheerful acquiescence in the decisions of the Board, which must often have appeared to them onerous, and their brave and resolute temper, have had a considerable share in conducing to this result. The Secretary trusts that he will not be considered as overstepping the strict limits of official propriety if he expresses the regret which he feels personally in severing ties which for months have bound him so closely, under circumstances of such unusual trial to the inhabitants of this devastated valley. The friendships which he has formed, however, will not, he trusts, be limited by time or space, but will continue to permanently enrich his future life. In whatever he may have failed in the full performance of his duty toward a people who elicited his warmest sympathies, he ventures to hope that the deficiency will not be attributed to lack of zeal or good intention.

In the signs of reawakening energy and enterprise which meet his eye on every side on each recurring visit, he gladly reads a prophecy of renewed prosperity, and his faith to believe that a Providence, which so wonderfully preserved them amid a cataclysm of such unexampled proportions, will inspire them with courage, determination, wisdom and virtue necessary to found a new city, which shall be grander and more enduring than that which was so suddenly and by so mysterious a decree swept out of existence.

BENJAMIN LEE, M.D.
Secretary and Executive Officer.

THE "DR. CHARLES H. GRAFF PROFESSORSHIP OF HYGIENE."—Dr. Charles H. Graff is the name of a man who deserves to be enshrined in the heart of every Sanitarian.

A graduate of Pennsylvania College, at Gettysburg, (Pa.), Dr. Graff located in the practice of medicine at Duluth, Minn., where he died about two months ago. The munificent sum of \$25,000 has been devoted by his father, out of the Son's estate, to endow a "professorship of Hygiene and Physical Culture" at Pennsylvania College. Not the least excellent part of this admirable departure is to be found in the wisdom of the Trustees, who have wisely selected Dr. G. D. Stahley, formerly of Easton, Pa., to fill this important chair.

In the light of such facts as here recorded, it is high time for croakers to stop croaking that hygiene is not a popular subject.

A CURE FOR DANDRUFF.—Dr. A. J. Harrison, of Bristol, recommends the following salve for dandruff:

Caustic potash	8 grains.
Phenic Acid	24 grains.
Lanolin, }	ää 3jv—M.
Cocoonut Oil, }	

This preparation should be rubbed into the scalp morning and evening. Complete cure is usually effected in one to three months.—*Le Progres Med.*

THE TIME WHEN IT IS NOT HEALTHY TO LAUGH.—"What's the matter?" the schoolmistress asked.

"Back's sore, ma'm."

"What made it sore?"

"Pop pounded his thumb with the hatchet this morning, and I laughed."

THE ANNALS OF HYGIENE.

VOL. IV.

PHILADELPHIA, DECEMBER 1, 1889.

No. 12.

COMMUNICATIONS.

PURIFICATION OF WATER BY METALLIC IRON.

BY J. H. McCLELLAND, M.D.,
Member of the State Board of Health of Pennsylvania.

The subject of a pure water supply for our cities and towns is one of increasing importance, as the sources of this supply become more and more contaminated by increasing population.

We may as well admit in the beginning that for most cities and towns we must depend upon the rivers and adjacent streams for the water supply inasmuch as wells sunk for the purpose prove inadequate for cities of any size.

The purification of rivers loaded with sewage by oxygenation in their natural course has also proven to be highly problematical, and so we are driven to the alternative of drinking impure water, or else the expedient of purification.

The problem to be solved plainly is, can purification of water be accomplished in a practical manner and on a scale of sufficient magnitude to supply large masses of population with wholesome drinking water, using the ordinary sources of supply, and by a method which shall ensure a continuity of operation at moderate cost.

Nothing short of these requirements will meet the demand, and nothing

short of them should satisfy any municipality whose water supply is not up to the standard of purity.

It is in the interest of this inquiry that your delegate set about investigating some of the water systems of Europe. This report, however, confining itself to a notice of one method—which finds its most perfect development in the system by which the City of Antwerp is supplied with abundance of pure water.

This system is known as *the method of water purification by metallic iron*, a method by no means new, but which has been brought to a state of perfection approximatively, in a practical every-day way in the City of Antwerp and other European cities of considerable size.

An important mission of this Board is to furnish the people of the Commonwealth with information pertaining to health and longevity, and I trust my efforts will prove suggestive in this direction.

With this end in view I made an investigation of the Antwerp system and was kindly aided by our American Consul, Col. Stewart, formerly of Pittsburgh, who made me acquainted with Mr. E. Devonshire, chief engineer of the water company.

Mr. Devonshire very cordially entered into an explanation of their method and at once made an appointment with me to visit the works at

Malines, some ten miles out of Antwerp, in company with Prof. Ad. Kemna, the very able chemist of the company, and a member of the Faculty in Antwerp.

In the hands of these gentlemen the task was not only easy but very pleasant. I might mention, parenthetically, that I have had the pleasure of meeting also Mr. Samuel Tomlinson, chemist of the municipal department of Bombay, who had come on the same errand as myself, showing how the ends of the earth may come together on matters of mutual interest.

We first noted the narrow sluggish river Nethe from which the water supply is drawn and shuddered to think of drinking so vile looking a compound. The river was low and the banks offered to view a surface covered with green slime. Now, following up the conduits we came to the filtering apparatus and thence along to the reservoirs, noting the changes as we went, until finally, we were shown the beautifully clear limpid water as delivered to the fortunate citizens of Antwerp. If all the cities of Europe were similarly supplied, I fear there would be less excuse for the average American traveler who must needs have recourse to the "wines of the country" for the deleterious effects of the drinking water.

Without attempting at this time a description of the apparatus and the details of the method, it may be said in general terms, that it is simply the *method of water purification by metallic iron*, an idea by no means new in itself, but which, in this case, had been taken hold of by practical men in a practical way.

Chemists and other scientific men were called upon to supply the idea, but

the practical engineers of the company put their wits to work and, regardless of cost, for the cost was great, brought the machinery and other details of the process to its present state of perfection. The essential feature of the process is that water is passed through a revolving cylinder which contains a quantity of small pieces of metallic iron, so that the iron is thrown in contact with the water, instead of the water passing through the iron, as was formerly done, a very important difference.

An important advance, it may be mentioned, in the use of iron as a purifier, was the "spongy iron" invented some twenty-five years ago by Prof. Bischof, but the very effectiveness of this material as a filtering agent (as of most good filters) proved the greatest barrier to its use on a large scale (or small one either for that matter), because the pores soon became filled and thus defeated the very object it was to subserve. The renewal of this spongy iron sufficiently often was practically impossible and so what promised to be a royal highway out of the difficulty, proved to be the direct road to a failure. The engineers, however, were not to be baffled, but consulted Sir Frederic Abel, C. B., F.R.S., an authority upon the subject, who confirmed the use of iron as the best and most harmless substance known for filtering purposes, but suggested as a way out of the difficulty that by some means *the iron must be thrown in contact with the water*. This idea was seized upon by Mr. Anderson, the practical head of the company, which constructs the filters, and he soon had in operation the present method by revolving cylinders. It was indeed a mighty achievement in hydraulics, and the question as to how

pure wholesome and palatable water was to be obtained, was at last solved.

The chief points of advantage to be considered in connection with this method, are :—

First. The water is rendered absolutely pure and free from all extraneous matters ; germs, bacilli, etc., etc., by all means the most important point.

Second. The process is exceedingly simple and the cost of the plant and its subsequent operation very small.

Third. The means employed are perfectly harmless, which is not the case with most of the effective filtering materials, especially the chemical ones.

Fourth. The material here used should certainly commend itself to our iron commonwealth.

But the authorities on the other side of the water take nothing for granted, and so in Antwerp as in other cities where this process is in use, a most thorough examination of the water is required weekly, and as I have been kindly furnished by Mr. Devonshire with copies of the official reports, I feel that they should appear herewith, as confirmatory of what has been said :

FIRST QUARTERLY REPORT, 1889.

ANTWERP, May 8th, 1889.

The undersigned, Ch. Blas, Professor at the University of Louvain ; A. Jorissen, Professor at the University of Liège ; Ch. Swarts, Professor at the University of Ghent ; E. Van Ermengem, Professor at the University of Ghent ; have separately carried out a series of weekly analyses of water of the Antwerp water supply during the first quarter of the year, 1889.

The following results have been obtained :

Residue on evaporation, 0.140 gr. to 0.193 gr. to the litre.

Chlorine, 0.015 gr. to 0.016 gr. to the litre.

Organic Matter, [Kubel's method], 0.027 gr. to 0.053 gr. to the litre.

Ammonia, [direct process], none.

Free Ammonia, [Wanklyn's process], trace.

Albumenoid Ammonia, [Wanklyn's process], 0.00009 gr. to 0.0001 gr. to the litre.

Sulphuric Oxide, 0.003 gr. to 0.020 gr. to the litre.

Nitric Acid, 0.000 gr. to 0.003 gr. to the litre.

Nitrous Acid, none.

Total Hardness, 7.5° to 11°.

Taste and Smell, normal.

Flavour, that of very soft water.

Bacteria, number of colonies per cubic centimetre after four days, from 31 to 140, no pathogenic micro-organism or any of a suspicious kind.

The results obtained by chemical analysis prove this water to be of irreproachable purity and of excellent quality, both for drinking and industrial purposes.

The bacteriological analysis allows it to be affirmed that the water is perfect from a hygienic point of view, containing hardly more microbes than spring water in general, and no microbe of a dangerous or suspicious nature.

Signed: SWARTS, VAN ERMENGEM,
JORISSEN, C. BLAS.

SECOND QUARTERLY REPORT, 1889.

ANTWERP, 10th July, 1889.

The undersigned having separately carried out weekly analyses of the water of the Antwerp supply, during the second quarter of the current year, state that this water has maintained its good quality mentioned in their first Quarterly Report, both as regards its organoleptic character, [*i. e.*, colour, taste, or smell,] and its chemical and microbiological character. When taken immediately on leaving the filters working in their normal way, and before any ulterior contact with the air, the water contains from four to six microbes per cubic centimetre, *a fact which places it on a par with the purest and most healthy spring water.*

These results are the more remarkable as they have been obtained during the period of summer heat, when the water of the river was undergoing a marked change for the worse. They demonstrate the efficiency of the system of purification applied at Waelhem.

Signed: SWARTS, VAN ERMENGEM,
JORISSEN, C. BLAS.

It may be explained in connection with the above that the purest spring

water known contains more free ammonia and other organic elements than the above analyses show as existing in Antwerp water as drawn from the city taps.

It may be further stated that soon after this method was put into operation, a series of experiments, some 200 in number, were made to test its measure of success in purifying waters of all degrees of badness.

These were conducted by Sir Frederick Abel, Drs. Frankland and Tidy, and Mr. G. H. Ogston, F. C. S., of England; M. Marie Davy, Director of the Observatory of Montsouris, at Paris; by Profs. Swarts, Blas, Ange-not, Kansas, and Jorissen of Belgium, and other eminent chemists, by which it was proved that this process of purification by iron, in the revolving cylinders, reduced the organic matter in waters from 45 to 85 per cent. according to circumstances. The albuminoid ammonia was reduced from 50 to 90 per cent. while the free ammonia was completely eliminated.

Since that time, the machinery having been further perfected, the astonishing results as indicated in the above official reports have been reached.

The systematic efforts of such companies as the Anderson company seem necessary to the success of any great project for the public weal, for the public seem very slow in availing themselves of any scheme for the general good unless it comes to be the interest of private enterprise to force it upon their attention. I am satisfied that this method of water purification by metallic iron is the best yet devised and it only remains for the people to adopt some such system as this, and the great problem of a pure wholesome water supply is solved.

THE USE OF ROSIN IN THE DESTRUCTION OF CARCASSES

BY BENJAMIN LEE, M.D.,
Secretary State Board of Health of Pennsylvania.

It was evident to every one who saw the situation at Johnstown immediately after the flood and noted the immense numbers of dead animals with which the ground and the wreckage were encumbered, that there was but one means of disposing of these dangerous objects, and that, by fire. This, however, was not always an easy task. There was wood enough at hand, but much of it was water soaked, and the incessant rains of the first month often made it difficult to keep fires going. It often happened that a fire would become extinguished leaving a carcass but partially consumed. In other instances where destruction had apparently been complete, the development of a putrescent odor several days later would lead to the discovery of fragments of flesh simply charred on the surface. The difficulty was met by the generous and entirely unexpected donation, on the part of citizens of Wilmington, N. C., of a large number of barrels of rosin and tar. The rosin was found to possess these very advantageous properties when applied to the cremation of carcasses. First, it substituted for the unpleasant and often sickening odor of burning flesh, quite an agreeable balsamic fragrance. Secondly, it burned with a fierce heat, hastening the process of combustion, and thirdly, it could not be extinguished by the heaviest rains. The manner of using it was as follows: The carcasses were strewn thickly with the rosin and the ground immediately

around them as well. Drift-wood was then piled up over them several feet in depth and the wood set fire to. If necessary, more wood was added until the destruction of the animals was completed. After such a cremation it was extremely rare to be compelled to build a second fire. The tar was not nearly so powerful an aid to combustion for this purpose, but it proved very useful in burning bedding, carpets, clothing, rags and straw, articles which it could penetrate and saturate, and was largely utilized in that manner. There were also immense numbers of stumps of trees, excessively hard and covered more or less completely with earth. These too the tar aided materially in burning. The object of this note, however, is to call attention particularly to the value of rosin for the purpose above indicated. Mingling with the fat of the animal it seemed to produce an extremely inflammable compound.

It might often be well for farmers and other large owners of stock instead of burying dead animals in shallow pits, when they often become an offence and possibly a source of disease, to dispose of them in this way.

1532 PINE STREET, Nov. 19, 1889.

LIGHT GYMNASTICS FOR SCHOOLS.

BY F. N. WHITTIER, A.M., M.D.,
Director of Sargent Gymnasium at Bowdoin College,
Brunswick, Me.

(Concluded from page 550.)

PART II.

SET I.

EXERCISE I—THRUSTING ARMS.

In position—Stand!

(1) Thrust arms sideward right, forward and upward in eight motions.

Begin! 1-2, etc.



Fig. 9.—Arms to Thrust.



Fig. 10.—Both Arms Thrust Sideward Right.

NOTE.—At ONE, raise arms to thrust, (Fig. 9); at two, thrust both arms sideward toward the right, keeping the feet unchanged but turning the shoulders so as to keep the

arms parallel (Fig. 10); at THREE, bring arms to thrust (Fig. 9); at FOUR, thrust arms upward (Fig. 11); at FIVE, lower arms to thrust (Fig. 9); at SIX, thrust arms forward; at SEVEN, arms to thrust (Fig. 9); at EIGHT, arms down (Fig. 1).



Fig. 11.—Arms Thrust Upward.

(2) Thrust arms sideward left, upward and forward.

Begin! 1-2, etc.

NOTE.—The same as (1) except that at TWO, the arms are thrust toward the left.

(3) Thrust arms sideward right, sideward left and upward.

Begin! 1-2, etc.

NOTE.—At ONE, arms to thrust, (Fig. 9); at TWO, thrust arms sideward right (Fig. 10); at THREE, arms to thrust; at FOUR, thrust arms sideward left; at FIVE, arms to thrust; at SIX, thrust arms upward (Fig. 11); at SEVEN, arms to thrust; at EIGHT, arms down (Fig. 1).

(4) Thrust arms outward, upward and forward.

Begin! 1-2, etc.

NOTE.—At ONE, arms to thrust (Fig. 9) at TWO, thrust right arm sideward right and left arm sideward left simultaneously (Fig. 5); at THREE, arms to thrust; at FOUR, thrust arms upwards (Fig. 11); at FIVE, arms to thrust; at SIX, thrust arms forward; at SEVEN, arms to thrust; at EIGHT, arms down.

EXERCISE II.—RAISING ARMS FORWARD WITH STEP POSITIONS FORWARD.

In position—Stand!

(1) Raise right arm forward with step-position forward right (Fig. 3).

Begin! 1-2, etc.

NOTE.—At ONE, raise right arm forward at the same time taking the step position forward right (Fig. 3); at TWO, return to position (Fig. 1); repeat during the eight counts.

(2) Raise left arm forward with step-position forward left.

Begin! 1-2, etc.

(3) Raise arm forward with step-position forward, right and left alternating.

Begin! 1-2, etc.

NOTE.—At ONE, raise right arm forward at the same time taking the step-position forward right (Fig. 3); at TWO, return to position (Fig. 1); at THREE, raise left arm forward taking step position forward left, etc.

(4) Raise both arms forward and rise on toes.

Begin! 1-2, etc.

EXERCISE III.—LUNGING FORWARD.

In position—Stand!

(1) Lunge forward right (Fig. 12).

Begin! 1-2, etc.

NOTE.—At ONE, arms to thrust (Fig. 9); at TWO, step forward with right foot, at the same time thrusting right arm upward, left arm downward, and turning the face upward, the eyes following the hand (Fig. 12); at THREE, arms to thrust (Fig. 9); at FOUR, arms down (Fig. 1); at FIVE, SIX, SEVEN and EIGHT, repeat.

(2) Lunge forward left (foot).
Begin ! 1-2, etc.

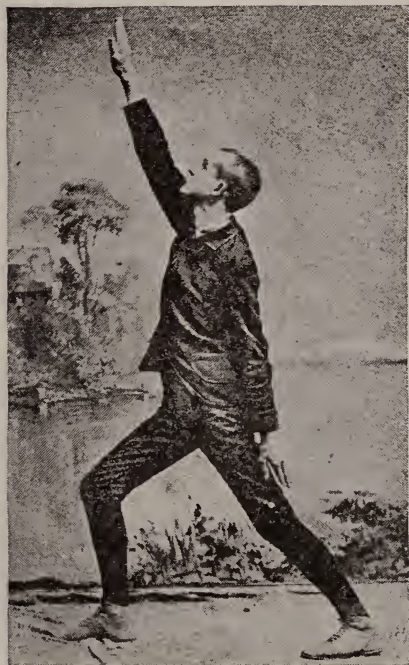


Fig. 12.—Lunge Forward.

NOTE.—In all foot exercises, whether lunges or step-positions, care must be taken not to allow the feet to drag when moving from one position to another.

SET II.

EXERCISE I—THRUSTING ARMS DOWNWARD.

In position—Stand !

(1) Thrust right arm downward (Fig. 13).

Begin ! 1-2, etc.

NOTE.—At ONE, arms to thrust (Fig. 9) ; at TWO, thrust right arm downward nearly to the floor, bending the body but keeping the legs straight (Fig. 13) ; at THREE, arms to thrust (Fig. 9) ; at FOUR, arms down (Fig. 1) ; at FIVE, SIX, SEVEN and EIGHT repeat.

(2) Thrust right arm downward.
Begin ! 1-2, etc.

NOTE.—Same as (1) except that the left arm is used.

(3) Thrust right and left arms downward alternately.
Begin ! 1-2, etc.



Fig. 13.—Arm Thrust Downward.

NOTE.—At TWO, thrust right arm downward ; at SIX, thrust left arm downward.

(4) Thrust both arms downward.
Begin ! 1-2, etc.

NOTE.—At TWO and SIX, *both* arms are thrust downward.

This is an excellent exercise for strengthening the muscles of the back and abdomen.

EXERCISE II—RAISING ARMS SIDEWARD WITH STEP-POSITION SIDEWARD.

In position—Stand !

(1) Raise right arm sideward with step-position sideward right (Fig. 4).

Begin ! 1-2, etc.

(2) Raise left arm sideward with step-position sideward left.

Begin ! 1-2, etc.

(3) Raise arm sideward with step-position sideward, right and left alternating.

(4) Raise both arms sideward and bend knees (Fig. 5).

Begin ! 1-2, etc.

EXERCISE III—LUNGING BACKWARD.

In position—Stand !

(1) Lunge backward right.

Begin ! 1-2, etc.

NOTE.—At ONE, arms to thrust (Fig. 9) ; at TWO, carry the right foot backward eighteen inches or more, at the same time thrusting the right arm upward and the left arm downward, as in Fig. 12. The position differs from Fig. 12 in having the right leg straight and left leg bent, instead of the right bent and left straight as in Fig. 12 ; at THREE, arms to thrust ; at FOUR, arms down (Fig. 1), at FIVE, SIX, SEVEN and EIGHT, repeat.

(2) Lunge backward left.

Begin ! 1-2, etc.

SET III.

EXERCISE I—SWINGING ARMS.

In position—Stand !

(1) Swing arms outward.

Begin ! 1-2, etc.



Fig. 14.—Arms in Position Forward.

NOTE.—At ONE, raise both arms in position forward with palms turned inward (Fig.

14) ; at TWO, swing arms outward, keeping them perfectly level with the shoulders, into position sideward (Fig. 15) ; at THREE, swing them inward, coming back to position forward (Fig. 14) ; at FOUR, arms down (Fig. 1) ; at FIVE, SIX, SEVEN and EIGHT, repeat.

(2) Swing arms inward.

Begin ! 1-2, etc.

NOTE.—At ONE, raise arms sideward with palms downward (Fig. 5) ; at TWO, swing arms inward, into position forward, with palms downward ; at THREE, back to position sideward (Fig. 5) ; at FOUR, arms down (Fig. 1) ; at FIVE, SIX, SEVEN and EIGHT, repeat.



Fig. 15.—Arms in Position Sideward.

(3) Swing arms outward and raise arms forward overhead.

Begin ! 1-2, etc.

NOTE.—First three movements same as in (1) ; at FOUR, raise arms forward over head with palms inward and face turned upward ; at FIVE, back to position forward (Fig. 14) ; at SIX, swing arms outward (Fig. 15) ; at SEVEN, swing inward (Fig. 14) ; at EIGHT, arms down (Fig. 1).

(4) Swing arms inward and raise arms sideward overhead.

Begin ! 1-2, etc.

NOTE.—First three movements same as in (2); at FOUR, raise arms sideward overhead, palms outward; at FIVE, back to position sideward (Fig. 5); at SIX, swing arms inward to position forward with palms downward; at SEVEN, swing arms outward (Fig. 5); at EIGHT, arms down.

This exercise is particularly valuable for overcoming round shoulders inasmuch as it exercises and so strengthens the muscles that hold the shoulders back in position.



Fig. 16.—Lunge Forward with Arms to Thrust.

EXERCISE II—RAISING ARMS FORWARD OVERHEAD WITH STEP-POSITIONS FORWARD.

In position—Stand!

(1) Raise right arm forward overhead with step-position forward right (Fig. 6).

Begin! 1-2, etc.

(2) Raise left arm forward overhead with step-position forward left.

Begin! 1-2, etc.

(3) Raise arm forward overhead with step-position forward, right and left alternating.

Begin! 1-2, etc.

(4) Raise both arms forward overhead and rise on toes (Fig. 7).

Begin! 1-2, etc.

NOTE.—In all cases when an arm is raised or thrust overhead the face is turned upward following the hand.

EXERCISE III—LUNGING FORWARD AND THRUSTING ARMS DOWNWARD.

In position—Stand!

(1) Lunge forward right and thrust arms downward (Figs. 16 and 17.)



Fig. 17.—Lunge Forward with Arms Thrust Downward.

Begin! 1-2, etc.

NOTE.—At ONE, step forward with the right foot, at the same time bring arms to thrust (Fig. 16); at TWO, thrust arms downward, bending the body (Fig. 17); at THREE, back to the position shown in Fig. 16; at FOUR, back to the fundamental position (Fig. 1); at FIVE, SIX, SEVEN and EIGHT, repeat.

(2) Lunge forward left and thrust arms downward.

Begin! 1-2, etc.

SET IV.

EXERCISE I—CROSSING ARMS.



Fig. 18.—Arms Crossed Forward.



Fig. 19. Arms Crossed Overhead.

In position—Stand !

(1) Cross arms forward (Fig. 18).

Begin ! 1-2, etc.

NOTE.—At ONE, raise arms sideward (Fig. 5) ; at TWO, cross arms forward, right arm uppermost (Fig. 18) ; at THREE, back to position sideward (Fig. 5) ; at FOUR, arms down (Fig. 1) ; at FIVE, SIX, SEVEN and EIGHT, repeat ; at SIX, crossing arms, with left arm uppermost.

(2) Cross arms overhead (Fig. 19).
Begin ! 1-2, etc.

NOTE.—At ONE, raise arms sideward in position, with palms forward (Fig. 15) ; at TWO, cross arms overhead, with head and neck drawn back and face turned upward (Fig. 19) ; at THREE, back to position sideward (Fig. 15) ; at FOUR, arms down, (Fig. 1) ; at FIVE, SIX, SEVEN and EIGHT, repeat ; at TWO, cross with right arm in front ; at SIX, cross with left arm in front as in Fig. 19.

(3) Cross arms forward, overhead and forward. Begin ! 1-2, etc.

NOTE.—First three movements as in (1) ; at FOUR, cross arms overhead (Fig. 19) ; at FIVE, arms in position sideward (Fig. 15) ; at SIX, cross arms forward (Fig. 18) ; at SEVEN, arms in position sideward (Fig. 5) ; at EIGHT, arms down (Fig. 1).

(4) Cross arms overhead, forward and overhead. Begin ! 1-2, etc.

NOTE.—First three movements as in (2) ; at FOUR, cross arms forward (Fig. 18) ; at FIVE, arms in position sideward (Fig. 5) ; at SIX, cross arms overhead (Fig. 19) ; at SEVEN, arms in position sideward (Fig. 15) ; at EIGHT, arms down.

NOTE.—This exercise is especially useful for correcting the "droop neck," or inclination forward of head and neck common among students. In pulling back the head and neck, as one is obliged to do in crossing the arms overhead, the muscles at the back of the neck, whose office is to hold the head and neck erect, are exercised and so strengthened.

EXERCISE II—RAISING ARMS SIDEWARD OVERHEAD WITH STEP-POSITIONS SIDEWARD.

In position—Stand !

(1) Raise right arm sideward overhead with step-position sideward right (Fig. 8).

Begin ! 1-2, etc.

(2) Raise left arm sideward overhead with step-position sideward left.

Begin ! 1-2, etc.

(3) Raise arm sideward overhead with step-position sideward, right and left alternating.

Begin ! 1-2, etc.

(4) Raise both arms sideward overhead and bend knees.

Begin ! 1-2, etc.

NOTE.—At ONE, raise both arms sideward overhead, with palms turned outward, at the same time bending knees ; at TWO, back to position (Fig. 1), etc.

EXERCISE III—LUNGING BACKWARD AND THRUSTING ARMS DOWNWARD.

In position—Stand !

(1) Lunge backward right, and thrust arms downward.

Begin ! 1-2, etc.

NOTE.—At ONE, carry the right foot backward, at the same time bringing arms to thrust. This position is like Fig. 16, except that here it is the left leg that is bent, while the right leg is straight ; at TWO, bend body forward and thrust arms downward (Fig. 17) ; at THREE, back to the position assumed at ONE ; at FOUR, back to the fundamental position ; at FIVE, SIX, SEVEN and EIGHT, repeat.

(2) Lunge backward left, and thrust arms downward.

Begin ! 1-2, etc.

It will be noticed that in Part II each movement occupies eight counts or beats of music, and that each set contains three exercises, the first being arm movements, the second, arm movements combined with step-positions, the third, lunges.

The exercises are arranged in this order, that they may be the easier to remember, that there may be constant change from one kind of exercise to another, and also that there may be a

gradual leading up from the easier movements to those more difficult.

Care should be taken not to teach a new exercise until the pupils have fully mastered all that precede. Each day have the class review all they have learned. In reviewing, have the class go through with all the exercises without stopping, keeping time to music or to the counting of the teacher or a class leader.

Music should not be used until the class has mastered the exercises. It should never be used in teaching them. After exercises have been fully learned it is well to have the class perform them occasionally as a "silent drill" without the aid of counting or music. The teachers must insist that the exercises be performed with the greatest accuracy ; it is only by this means that the interest can be kept up.

After Part II has been learned it should be performed daily as a drill. The length of the drill can be doubled, if necessary, by giving sixteen counts to each movement instead of eight. At the time of exercising the school-room should be thoroughly ventilated. In cold weather it will be found convenient to have the exercises come just before recess so that the air of the room can be warmed again before the scholars return to their studies. The clothing worn must be loose with no tight belts or bands.

A word of caution to teachers. Don't require too much exercise at first. In giving class exercise the work must be no more severe than the weakest pupil can stand. Five minutes of brisk class exercise is enough at first, fifteen minutes is enough at any time.

Besides giving class exercises the teacher should note the physical defects

of each pupil and recommend to each the exercises necessary to correct them. For example, for drooping necks or round shoulders, recommend Exercise I, Set IV, for round shoulders, Exercise I, Set III, should also be given. In case there is weakness of the muscles of the back or abdomen, give Exercise I, Set II, Exercise III, Set III, or Exercise III, Set IV. If one shoulder is lower than the other the following exercise may be given; at ONE, raise arms to thrust (Fig. 9); at TWO, thrust the arm on the side of the low shoulder forcibly upward while the other arm is thrust downward; at THREE, arms to thrust; at FOUR, arms down.

If the lungs are weak they will be greatly benefited by the class exercises, many of which were selected because of their value in broadening and deepening the chest, and which have been made sufficiently vigorous to tend to develop and strengthen the lungs and heart. The "breathing exercises," with which everybody is familiar, may be cautiously used, but in general it is better to develop the lungs in the natural way, *i. e.*, by vigorous exercise, than by any such artificial method as "forced breathing." In certain cases where forced breathing has been carried to excess it has permanently dilated the minute air cells of the lungs and has thus brought about a condition far worse than that which it was designed to cure. Pupils may be arranged in little squads or classes, made up of those having the same defects, and required to do special work with a view to their correction.

The plan of exercise given should be adhered to during an entire school year. After the first year new and more difficult exercises may be given

and for the older pupils apparatus should be provided. Dumb bells or wands add much to the interest of the exercise, but for the first year the free exercises are to be preferred, and indeed in all cases where the pupils are under twelve years of age.

As has been said, the plan of exercise given here is intended only as an introductory course. The advantages claimed for it are, *that it costs nothing, that the exercise can be performed in the school room between the aisles and that the exercises given are just as valuable, though perhaps not so attractive, as exercises with apparatus.*

If an intelligent course of physical training could be given in our public schools, it would be but the work of a few years to banish drooping necks, round shoulders and narrow chests—in short, to completely change the physique of the American people.

The success or failure of any plan of physical training depends largely upon the instructor. The teacher must interest the pupils, must know what to do and how to do it.

The giving of gymnastic exercises with no idea of their uses or effects is like turning loose a sick child in a medicine closet.

The nervous, excitable child requires a different course of physical training from that required by one that is indolent and sluggish. The class work should be adapted to all, while in addition, each pupil should receive special training according to his individual needs.

The value of physical training as an aid to moral and mental culture must be constantly kept in mind. This may seem strange to those who regard education as simply the training of the logical faculty and the cramming of

the memory ; but the time is coming when all will realize that the true system of education is three-fold—moral, mental, physical ; and that it is impossible to secure the highest development in any of these lines without careful training in the others.

THE PREVENTION OF COLDS.*

BY HENRY G. HANCHETT, M.D.,
Of New York.

To prevent colds, why should we not adopt the plan of developing the elasticity and vigor of the skin? Clothing and the habits of civilized life both tend to hamper and relax the skin and make special effort necessary to secure and maintain the highest efficiency of the organ. The skin should be prepared to meet and resist atmospheric cold by systematic and regulated exposures to cold treatment, which is easiest applied in the bath. Begin with such a temperature as is easily within the reactive powers already present, when the time of exposure is properly regulated, and increase the demand for reactive effort as the ability to respond becomes greater, and thus develop the peculiar powers of the skin by use, on exactly the same principle that is universally applied in strengthening the muscles.

A case in detail will make clear how this plan of prevention is to be carried out. Mr. A. B. was a resident of Boston, a married man of about thirty-eight years of age. Six or eight years before coming under observation he sustained an attack of pneumonia from which he recovered with a condition of the lungs thought by his physicians to be so delicate as to

make a residence in Boston during the winter very imprudent for him. He was told that a cold would almost certainly result in pneumonia in his case, and that a second attack of that disease would probably terminate fatally.

He therefore spent the months from December to April, each year, in the South, at great inconvenience and loss to himself. He then came under the care of Dr. A. H. Laidlaw, of this city, who undertook to fit him for a winter residence in Boston. Treatment was begun in October with trunk and spine rubbings twice a day, continued for from six up to ten minutes, washing off with water gradually reduced in two weeks time from 90° F. to 70° F. At the end of the two weeks half-baths were commenced, the duration of which were uniformly three minutes, and at first two baths daily were given. The initial temperature was 90° F., which was reduced by 1° F. at intervals of three days until 85° F. was reached, then 1° F. was deducted each week until 75° F. was reached, then 1° F. each fortnight till 70° was reached. At that point the temperature was maintained through the treatment of this patient, although in some exceptional cases 68° F. or even 66° F. can be advantageously employed. During the whole treatment one day of rest was allowed each week, and occasionally a second break in the week was made. The following spring the baths were reduced to one daily and so continued. The first winter was passed in Boston without a cold. The second winter a slight cold was experienced, lasting about five days, but yielding readily to treatment. Seventeen full winters have now been passed by this gentle-

*From the *N. Y. Med. Times*.

man in Boston, and so far no second attack of pneumonia has been experienced.

Of course, in giving these baths for this purpose an important point is the encouragement of the reaction by brief but vigorous exercise in cool, fresh air before dressing. My own plan is to step from my morning bath into my sleeping room, which has remained freely open to the outer air throughout the night, and there to exercise by dumb-bell movements, chest-weights and jumping, for ten minutes, and then to dress. The bath towel I ignore, and I deprecate the vigorous dry rubbings with coarse towels and flesh brushes which are so often advised. Of course, no sane man would step from a bath of 90° F. into a frosty air for any purpose—that part of the plan is for those of fairly developed vigor, who are using colder baths and reacting from them easily.

Oftentimes when we say we have “taken cold” we might more appropriately state that we have “taken heat,” for the influenzas prevail when the temperature tends upward, in the spring time; and more than half the colds are caught when leaving the crisp, bracing outer air of winter to enter the close, over-heated rooms in which so many Americans seem to take delight during the cold season. Still the plan of treatment I have detailed will protect even against these exposures, for it develops elasticity and responsiveness in the skin, while it is the sluggishness of that organ as compared with the mucous membrane, in relaxing under the influence of higher temperature, that allows the congestion of the lining of the air passages; and it is its inactivity as a cleaner—combined frequently with

obstructions at the other outlets, and an overloaded condition of the nutrient vessels—that continues the congestion as an influenza or catarrh. You will readily see how the plan of bathing and exercise will act as a preventive against colds induced in this way, as well as against the evil effects of cold itself. A healthy and active skin is a very desirable possession regardless of the character of the exposure to which its owner is subjected, and regulated bathing will secure the health and activity of the organ in any properly nourished individual.

MATERNAL IMPRESSIONS.*

BY J. WETHERBY, M.D.,
Arlington, Kansas.

“Minds of great men do not run in the same channels.” This seems to be true regarding maternal impressions, or “birth-marks,” as they are commonly called among the laity. Although there is a great diversity of opinion in regard to this subject among members of the medical profession, it is generally believed by the people at large. Almost any grandmother with whom you may converse on this subject will relate instances that have come under her personal observation, that to her mind at least are undoubtedly birth-marks; and to tell her that you do not believe in such things as these would brand you forever as an *ignoramus* in that old lady’s opinion.

The fact that the belief is so widespread, extending to all nations and peoples, civilized or barbarous, ignorant or educated, would of itself lead us to think that there must be something in it, some foundation for such

*Abstracted from the *Med. Record*.

belief. There are very few ideas which are almost universally accepted by the world, as is the belief in mother's marks, that do not have some pretty sure foundation upon which the superstructure is built. Of course there are many beliefs or theories that are merely superstitions, and many physicians relegate the theory of mother's marks to this class; but very often these same superstitions, which are looked upon as relics of the dark ages, are only perverted facts. Again, because our grandmothers universally believed in some theory it does not follow that their theory is correct, for it is often widely contrary to the truth; but the opinion of these old granddames is not always to be lightly set aside, for they are frequently close observers, and often arrive at very sensible conclusions.

Having said so much by way of introduction, I wish to report the following cases which have never been in print before, and which, to my mind, are genuine cases of maternal impressions.

Years ago, one of my aunts lay upon her death-bed, and the relatives were all assembled to bid her a last good-by. One of her aunts, who lived at a distance, did not arrive until just before my aunt died; and as she approached the bedside the dying woman recognized her voice and tried to greet her with a look of welcome, but so near to death was she that only the right eyelid obeyed the impulse of the will, the left remaining almost closed, which gave a peculiar expression to her countenance. It affected the visiting woman very greatly, and was frequently referred to by her for weeks afterward. At the time of the death-bed scene she was four months

gone in pregnancy; and when, five months later, her child was born, there was the same degree of drooping as was observed in the case of the dying woman, the same eye being affected. The eye was normal in every other respect.

Sceptics might say that the above case was only a coincidence, there being many cases of congenital drooping; but what follows ought to convince the most sceptical, as two cases following each other so closely, in both of which there had been strong mental emotions of a certain character, would hardly be mere "coincidences." When the child just referred to was born, the mother recalled the effect which her niece's case had had upon her, and attributed the drooping to it. It became the talk of the neighborhood, and everyone was anxious to see the child. Among the visitors was a distant relative of mine, who was also enceinte. She did not think of her own condition, and was surprised, when her son was born, to find exactly the same defect there was in the first child.

To my mind these cases prove that birth-marks are possible, and that they do occur. Both of the children have grown to manhood, and the drooping is as marked to-day as it was when they were born. Neither woman expected her child to be marked.

Another case was that of a woman four months pregnant, who spent the day with a family where there was a child having convulsions, of which it died. Between the convulsions the muscles, especially those of the eyes, "twitched all the time," as she expressed it. She said the case seemed to fascinate her. Many times during the day she resolved not to look at the

child again, and as often found herself watching it. When her child was born its eyes "kept rolling all the time, and all its movements were jerky."

A case reported by the writer in *The Medical Record* in 1888, was that of a woman who cared for some sheep during her pregnancy, and when her child was born its head was covered with a growth which seemed to be exactly like lamb's wool. She does not remember having been frightened by a sheep. The child is now four years of age and is perfectly developed in all other respects. Her woolly head gives her a very peculiar appearance. There is no African blood in either of the child's parents. An interesting feature of the case is, that the wool never gets long enough to need cutting, and always falls out in the spring. I had some of the wool subjected to a microscopic examination, with the result that it showed the microscopic structure of hair; "but," the microscopist wrote me, "that does not interfere with the birth-mark theory, since the woman had no conception of the microscopic appearance of wool, and could only transmit to her offspring the impression as it was conveyed to her." Children are not marked with the *real* object, but with the resemblance of the object.

A woman who was pregnant, was watching at the bed-side of her dying husband. Her left hand was held in his so tightly that it became painful. He died holding her hand in this manner, and when her child was born there were only the merest traces of rudimentary fingers upon its left hand. I do not know how far she was advanced in pregnancy when the impression was made.

COMFORT AS A SANITARY OBJECT.*

BY G. C. ASHMUN, M.D.,
Health Officer, Cleveland, O.

An acknowledged characteristic of our distinguished kinsman John Bull, and his family, is the unfailing assertion, and usually, of persistent effort, to gain whatever he thinks will contribute to his and their comfort, no matter what the rest of mankind may think or do about it! That is to say, a large appreciation of the value of certain things, especially of bodily comforts, is expressed forcibly, and thereby much is accomplished toward securing them. Not from any desire to stimulate new types of Anglo-mania, but with a view of contrasting some of our habits that this national characteristic is cited. In this country where the spirit of continual labor prevails and money-getting has been our most pronounced faculty, the suggestion of personal comfort or community comfort as an object of importance as compared with commercial interests, is regarded in the nature of a surprise and well nigh irrational. Every "health" official in this part of the world has been met, in "court" and out of it, with the sneering rejoinder, when discomfort is alleged as ground for action, "you don't pretend to say this, that, and the other, which affects the peaceful occupancy of premises is unhealthy, do you?" The horse stable, cow-stable, pigpen, geese, ducks, chickens, goats, cats, dogs—the smoke, dust, noise, gases—the hundred unthought of sources of offense in towns, and which cannot be charged with pro-

* Read before the Ohio State Sanitary Association.

ducing a case of any recognized disease, yet when by aggregation or proximity make people utterly desperate in their uncomfortableness—these are the hard matters to adjust and control. And the constant tendency of courts and juries is to demand proof of definite injury, present or prospective, to property or health before any estimate of damage or order to abate can be secured. This difficulty appears to arise from the low estimate placed upon certain states of mind and body, "lgeneral" conditions oftentimes, but more often "specific," which are essential to perfect rest after labor, and the best development.

Our communities have been so anxious to secure "business," that all sorts of shops, factories, and industries which added to the growth of the place have been welcomed, no matter what discomforts were entailed. And from this sentiment among the people, especially the dealers in real estate and manufacturers, the unsentimental court and jury hold to the positive, money value, estimate of injury. In many instances these discomforts fall upon people not benefitted directly or collaterally. Capital from another part of the country, or even from without the country, comes into a city or town, erecting and operating mills, factories, breweries, &c., whose chimneys belch smoke, whose immense hammers pound by day and night, and whose whistles awaken all animated things within a radius of miles, whose waste products fill the air with stench, until the dwellers in houses or dwellers in caves are forced to seek relief in flight—while the far away owners reap—dividends! And the poor and weak ones of earth, who can neither fly nor run, and whose bread depends upon these same works,

are forced to yield the last remnant of comfort from ceasing to labor, because, forsooth, the operators do not even dream of comfort coming to such people or places! And this brings forward the point that the term "comfort" indicates a wide range of conditions, and of necessity is comparative in all its meanings, yet we appreciate the fact that something and some state may fall to every life which can be included to promote or lessen the enjoyment of every situation. In individual life where the struggle for what are regarded necessities no sooner secures them, than the hand is stretched out for things which may have been in view long before, and regarded quite worth the money or effort to make life desirable. In community life there is something of the same tendency seen, but for some reasons apparently inherent in the American constitution and perhaps resulting from the commanding commercial instinct among us, the community interests in this respect are not yet fully awakened, and many conditions of discomfort tolerated. In this State especially there are some very common and almost undisturbed sources of annoyance to the residents of nearly every town and village, *viz.*: the condition of streets, the smoke and gases from the combustion of bituminous coal, the odors of petroleum, the steam whistles, and now the electric wires and apparatus. None of these are here cited for the purpose of enlarging upon their specific effects on people using or enduring them, but as samples of useful agents with certain accompanying disturbing factors, which are worthy of attention. The condition of streets in many if not most of our cities and towns at certain seasons of the year are a constant menace

to the morals if not the lives of the citizens! And it is well nigh beyond the range of imagination that children can be reared with an appreciation of the beauty and value of cleanliness when in all their tender years they pick their way to school through mud and filth on sidewalks and street crossings, or are forced to use privies and latrines, whose odors and sights are degrading to health and morals.

Cleanliness is a luxury, it is true, to any well enlightened mind. Most animals express a preference for it, and will have it when free to follow their natural inclinations. This comes from their increased comfort thereby—a comfort and luxury even, which never debilitates or impairs constitutional vigor! It is not only the comfort of cleanliness or the comfort of the privilege to be clean, but a freedom from all the positive irritants to skin and mucous membranes, and such protection from heat and cold, as to permit of a full and symmetrical growth and development of children, and the refreshing rest of adults which is here contended for, and urged as an important, necessary, and, as yet, unsecured result. Not in any sense should such considerations be misapplied and made a cloak or excuse for hypersensitiveness about trifles—an inability or unwillingness to bear the common vicissitudes of life! Far from it. We need all the helps of exercise and use of muscles voluntary and involuntary, of nerve-centres and nerve-terminals, even the conflicts and burdens of active, aggressive life to make our men and women of wit and strength enough to secure and defend their homes from unfair encroachments. A Spartan training, a life deprived of all softness and cheer, may be called for in certain times, and

a race of warriors produced thereby. But these are not the peaceful lives of peaceful times we are here considering, or that sanitarians are called upon to protect. On the contrary it is those poor rich babies, so wrapped in soft finery on a hot day, so shut up in hot rooms, and trundled about in laps and carriages—those children whose nerve-centres become exhausted from the continued irritation of nerves of skin from long hair, dirt, eczemas, with poor food, poor digestion, poor sleep—it is the adults as well as children exposed to the gases and odors of slaughter-houses, tanneries, soap factories and the burning of sulphur, coal, the making of varnish, refining oil, &c., until they scarcely know or remember air free from some gross impurity. It is the army of the ignorant who by their vices and worse than brutish habits inflict upon their poor bodies such miseries that artificial narcotism is the only respite they obtain. These and all others in our cities and towns are awaiting the gospel of an enlightened comfort. A gospel which does not preach a punishment in a world to come, for the destroyers of comfort without compensation, but a teaching that here and now such theft or destruction of a common birthright will not be borne. It is an exploded sophism that it is better to bear all forms of discomfort than to make a fuss and be rid of them, even, though in retrospect it must sometimes be confessed that it would have been better to bear certain ills than fly to those unknown. It may be and often is easier to simply endure many of the causes here enumerated than to contest them, but there is now a positive demand upon the people of this country and State to assert that individual and family com-

fort is an essential factor in the welfare of the people ; that it is a worthy object of effort to obtain and defend, and that money making and money makers while necessary and important factors, cannot be allowed to encroach upon this natural franchise. In the city where I reside the use of soft bituminous coal for manufacturing and heating purposes is general. It is essentially a manufacturing city, and each day no matter from which quarter the wind may blow, a dense cloud of smoke and soot envelops the homes of about fifty thousand persons. At certain times and conditions of atmosphere the sun is entirely obscured to these people for hours, and if doors and windows are opened, the clothing, food, books, furniture — everything within the house is sifted with coal soot. Fortunately the wind seldom blows from the same quarter more than two days in succession, but the result is constant annoyance.

Noises from various sources and of varying degrees are in the same class of comfort destroyers. The steam whistles, steam exhausts, the roar and rush of cars and vans, the list is interminable and increasing daily. Each special sense may afford the channel through which the irritant is applied. Sanitation looks to those conditions and agencies by which come diseases, but looks to much besides. The conditions and agencies which retard or prevent recovery from disease produced in any way, are not less important than those actually causing disease. Then, too, everything which prevents the best development and exercise of all the functions of body and mind come within the scope of sanitary effort. Here lies the broad field, and in that field this element of comfort has a place which

the people for themselves should demand, which courts, as agencies for the protection of the people's interests, should recognize as a legitimate and reasonable demand, which all classes in our communities as related to each other and the whole should be ready to promote and defend as superior to amassing fortunes by the few, which health officers and authorities should insist upon as one of the important ends of their work and purpose to secure.

Not long since in a discussion upon an ordinance to regulate the blowing of steam whistles, an alderman exclaimed that he welcomed every smokestack and all the smoke, every whistle and every wheel in the city, and thought they should not be regulated or restricted in any manner whatever, because it was evidence of just so much more business ! This view has been so common and popular, in the general interest for money making, and labor furnished, that few have considered how little the money making would have been hindered, and how much comfort would have been gained in the homes of laborers and others if either locations for shops had been well selected ; or smoke stacks high enough to carry the smoke well overhead ; or whistles of reasonable tone and strength used ; or the exhaust of steam made into cisterns or water. And the rushing business man acts, if he does not say, to all who are suffering under the noise, the dirt or stench of his business, if my business here is not sufficient compensation for all this and you don't like it, you can move away ! Where then does the line of reasonableness in this matter, fall ?

Unnecessary interference with business interests and methods is alike un-

democratic and disastrous to essential factors in civilized life. Yet there are other interests underlying and objective in character which demand respectful attention. And there must always be an official and delegated authority to determine "the reasonable." For there are specimens among human organisms with perceptions of sound, smell and dirt so acute that distance or degree avails but little for their relief. These on the one hand, and the utterly reckless on the other, are the two classes in the community to be brought to this "official" reasonableness."

Whenever a business, pursuit, or use of or upon any one person's or corporations' property extends in any wise to impair the uses of other property for any purpose whatsoever, in strict equity the owners and users of property so offending should be held for the impairment. But in our communities there are certain offenses which are mutual, common to the whole, and such strict rule of equity cannot well be determined or observed, for example, the smoke from dwellings, the obstruction of light and air by buildings, etc. So that some modifications of the strict rule are always understood and allowed for. From these and other considerations the difficulty arises in minds judicial and sanitary, to arrange and enforce standards and limitations in these matters. It has appeared to me that there can be but one guiding principle by which to reach conclusions. Where no definite money or health loss can be established, but where the comfortable undisturbed occupancy of the homes of people, however humble or elegant, is impossible or seriously compromised, it shall always and in all places be regarded of more vital im-

portance than simply commercial pursuits and interests.

It may be thought these are already acknowledged principles, and accepted and respected by the mass. But a little observation and breaking from long habits of thought will show that in almost all of our larger cities and towns these are some of the things most commonly ignored and disregarded. We have absorbed by tradition, we have been educated by "Poor Richard" maxims, we have lost sight of and failed to appreciate relative values to such an extent, as to waste on the unimportant or positively harmful what would give all this part of the world the comfort and cheer of *good* living.

The contest against disease which preventive medicine contemplates, and which it is now reducing to a scientific and physiological basis, necessary and hopeful as it is, cannot afford to neglect this comfort-saving aspect, so closely associated and so potent in determining results.

"Relief from pain" by the removal of causes or simply diversion, is one of the most clearly defined objects of treatment in many diseased states, thereby securing rest and preventing exhaustion. So relief from these irritating and rest disturbing causes in our communities, especially to the classes of people who have few reliefs and comforts in their ordinary pursuits, thereby attaching them more closely to their homes, makes them better citizens and strengthens the whole social structure, and gives stability to the best things. Contentment ought not to be felt without cleanliness, and where it is, one may be sure that degradation and hopelessness have entered.

The modern tendency to the use of

nerve-stimulants and narcotics has much of its origin in the lack of home comforts. Not all, of course, of the class now under consideration, and not all can properly come into the field of sanitary operations as to cause or remedy. Yet none other of the official forces of the State and municipal governments are so constantly made aware of these avoidable disturbances to the homes of people or perhaps see their effects so clearly.

WORK KILLS NO MAN.—From the Harveian Oration delivered at the Royal College of Physicians, October 18, 1889, by J. E. Pollack, M.D., F. R.C.P., we quote the following concluding sentences :

I need not say to such an audience as this that *work*—the due exercise of every function given to us—kills no man and shortens no life. The causes are to be found in what is called our extended civilization. We are no longer traders to one country, nor for one or two commodities ; but the telegraph has introduced us into a widened sphere, and our merchants have investments in every climate, and enter on risks of a kind so varied that the knowledge of no one man is sufficient to grasp it. Hence there are the anxieties of extended speculation, and a necessary want of the perfect understanding of each. The knowledge of one kind of trade was formerly “power” and led to prosperity ; now we are playing games with all the world. Those who are present know well what part of the organism it is which generally fails under such pressure. The public say it is *brain*, but we know that it is *heart*—the motor power which Harvey studied, although, perhaps, he did not foresee to what

pressure a modern civilization and struggle would subject it.

I have spoken but of the trading class and the speculative class, but all classes of society should learn to counteract in themselves the depressing agents of excessive worry, and to beware of the race which, once entered on, may exceed the best of our powers and ruin the machine.

A SWEET YOUNG ATHLETE.—Some truth and much matter of a different character has been written about the athletic training of fashionable girls in New York. Here is a true story illustrating this feature of metropolitan life. A young man met this summer a sweet and gentle girl of seventeen, whose left arm was partly disabled. He made proper and sympathetic inquiries, and here is the answer he received. “I did it in the gymnasium in drawing myself up to the horizontal bar. Of course, I could do that easily enough with my right arm, but when I tried it with my left, something snapped, and for six months I’ve had trouble with the injured arm.” Any man who has tried to “chin” himself with either arm knows that it is a feat which only comes as the result of considerable athletic training. But this soft-looking creature of seventeen regarded it as a matter of course.—*St. Louis Republic*.

UNSUSPECTED LEAD-POISONING.—A European authority calls attention to the fact that many cases of colic among beer-drinkers are due to lead-poisoning from drinking beer that has been either pumped through leaden pipes or through pipes into the composition of which lead largely enters.

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EDITORIAL.

OURSELVES.

When this journal started out its platform contemplated furnishing to its readers forty pages of reading matter monthly. During the past year we have furnished six hundred and thirty-eight pages, which, divided by 12, would give an average of about fifty-three pages for each issue.

It will cost about fifty cents to bind the volume closing with this issue, so that for \$2.50, our subscribers will have a bound volume of 638 pages; certainly very cheap literature. We have more than kept our promises in the past; we now promise for 1890 a better journal than ever and our patrons can rest assured that we will also keep this promise.

OUR SECRETARY'S REPORT.

We desire to ask special attention to the report of Dr. Benjamin Lee, Secretary of the State Board of Health, published elsewhere in this issue, for two reasons.

In the first place, this report will

indicate wherein the Board has failed to secure the legislation for which it has asked and which, to it, seemed essential for the welfare of the people of the State. At the same time important suggestions are made as to future legislation, which ought to and can be secured, if the *people* of the State will make it known to their representatives at Harrisburg that such legislation will meet their approval.

There are now a large number of prominent and intelligent persons, in all parts of this State, regularly receiving, and, we hope, reading this journal. If these influential persons would make it a point to personally see their representatives in the next legislature, prior to their departure for Harrisburg and urge upon them the importance of sanitary legislation, supplementing this personal interview by occasional letters of reminder, such proposed legislation would become a reality.

It will not do for this Board, to go, unaided, before the legislature and ask for legislation; such a request, to be effectual must be backed up by public opinion and the readers of this journal can furnish this necessary backing, if they will.

Secondly. We would ask a careful perusal of Dr. Lee's report, because it furnishes the most complete, concise and reliable account of the work done by this Board at Johnstown, that has yet appeared anywhere.

INVESTIGATION OF LEPROSY.—Dr. Dutze, formerly assistant in Dr. Unna's clinic at Hamburg, has been invited to proceed to Honolulu by the Hawaiian Government, and to remain there some time to study leprosy and to investigate the effect of new methods of treatment.

NOTES AND COMMENTS.

BUTCHER-SHOP REGULATION.—The Municipal Council of Paris has ordered that the debris of butcher-shops shall be removed before baybreak.

RAREFIED AIR.—Dr. Viault, Professor of the Medical Faculty of Bordeaux, has been charged with a mission to the high plateaus of Peru and Bolivia, where he is to continue the experiments of Paul Bert relative to rarefied air.—*Le Bulletin Médical*.

LET TROUBLE DO THE TRAVELING.—*Scranton Truth* forcibly, pithily and sanitarily puts the truth when it says that it is a great piece of folly for a man to be always ready to meet trouble half way. If he would put all the journey on trouble he might never meet it.

ADVICE TO PARENTS.—The two most important things in human life are a good moral character and sound health. The first of these, perhaps, says the *N. Y. Times*, does not need a conscious inculcation. A good example set by the parents and the giving of the children in their own persons improving society is better than any amount of precept.

BERLINERS EATING HORSE MEAT.—A dispatch from London says that the consumption of horse meat in lieu of beef is daily increasing in Berlin, and it has become almost impossible for the butchers to procure sufficient genuine beef to supply the demand of those who are able to pay the almost fabulous price which that commodity commands.

LEPROSY IN NOVA SCOTIA AND NEW BRUNSWICK.—Dr. Smith, the medical attendant of the Tracadie Leper Hospital, New Brunswick, having been commissioned by the Canadian Agricultural Department to make inquiry concerning suspected cases of leprosy reported in Nova Scotia, fully confirms the diagnosis. It is also reported that there are a considerable number of other cases believed to exist in the northern part of the province.—*Brit. Med. Journal*.

FOR BALDNESS.—In commencing baldness, Vigier advises the use of the following formula, in which the proportions are given by weight :—

R Alcohol (80°)	20 drachms.
Camphorated alcohol	4 scruples.
Rum	4 scruples.
Tinct. cantharides	4 scruples.
Glycerine	4 scruples.
Ess. santal	5 drops.
Ess. wintergreen	5 drops.
Ess. laurel roses	5 drops.
Pilocarpine mur	8 grains.

M. Sig.—This mixture is gently rubbed on the scalp once a day.

A NOVEL TOBACCO ANTIDOTE.—Habitual tobacco users and whiskey drinkers have been cured by the following plan: Those who smoke their first cigarette say at seven o'clock in the morning, begin by putting it off just ten minutes past the hour for a few days, then make it fifteen or twenty minutes, and so on, until it will be noon and then night before the first one is smoked. If it is slow it is certainly a sure way of tapering off if faithfully followed.

RAIN WATER vs. TYPHOID FEVER.—We have, elsewhere in this issue, made the statement that well water is

a very dangerous water to drink, and we have shown how one contaminated well produced a number of cases of Typhoid Fever.

Our own fancy has been that rain water, collected from a clean roof, into a clean tank, is the safest water to drink, and this idea is corroborated by the fact that in New Orleans, where the use of rain water is universal, typhoid fever is a very rare disease.

THE INTUITIVE WISDOM OF THE INDIAN.—The Indian is not such a fool as many think, and seldom has he more wisely displayed his native or intuitive wisdom than in the recent execution of a "medicine man," in Wyoming Territory, because he failed to keep the members of his tribe well.

The Chinese and the Indians seem to have the true conception of the proper function of a doctor, for they look to him for the preservation of health; it is only the *wisely civilized* white man who waits until disease is on the warpath and then hurries for the doctor to combat it. The Indian and the Chinese believe in prevention; we believe in cure, *if we can cure*; which civilization, think you, seems the most civilized?

A USEFUL CEMENT.—The following has been used with the greatest possible success for the cementing of iron railing tops, iron grating to stoves, etc.; in fact, with such effect as to resist the blows of a hammer. This mixture is composed of equal parts of sulphur and white lead, with about one-sixth proportion of borax, the three being thoroughly incorporated together, so as to form one homogeneous mass. When the application is to be made of this composition, it is

wet with strong sulphuric acid, and a thin layer of it is placed between the two pieces of iron, these being at once pressed together. In five days it will be perfectly dry, all traces of the cement having vanished, and the work having every appearance of welding.

BACTERIA.—

In a paper recently read before the Boston Horticultural Society Mrs. E. E. Richards said that the "dust" in rooms is largely composed of living bacteria and that the ordinary "dusting" of furniture with a feather duster only transfers those bacteria to the throats of the inmates. Moral, don't dust."

This quotation from a lay paper well illustrates the ignorance that is abroad and the necessity that exists for sanitary enlightenment. We must know, if we do not already know, and remember, if we forget, that it is not the myriads of *harmless* bacteria everywhere and forever present that we must fear, but it is the specific, particular bacteria or seeds of particular diseases that we must avoid. Let the housewife dust all she pleases, the more the better.

A CURIOUS PROTEST AGAINST RAILROADS.—The *Railroad Gazette* is authority for a curious protest recently found in the archives of the Nuremberg Railroad Company at Furth. It was drawn up by the Royal College of Bavarian Doctors, in the year 1835. The following passage points out the dangers of the new method of traveling: "Travel in cars drawn by a locomotive ought to be forbidden in the interest of public health. The rapid movement cannot fail to produce among the passengers the mental affection known as *delirium furiosum*. Even if travelers are willing to incur

this risk the government at least should protect the public. A single glance at a locomotive rapidly passing is sufficient to cause the same cerebral derangement; consequently it is absolutely necessary to build a fence ten feet in height on each side of the railway."

FREAKS.—Far be it from us to interfere with any man's business, but, even at this risk, we cannot refrain from emphatically and unconditionally condemning the display of monstrosities and freaks and all sorts of repulsive looking objects that now forms so large a part of the business of the cheap museums in our large cities. Not only are such exhibitions morally demoralizing to the adult who may witness them, but the injurious effects of such exhibitions upon generations yet unborn is a real and a terrible one. Worse than the museums themselves, even, are the advertisements thereof which are inserted in the newspapers; they are disgusting, demoralizing and *useless* and we fear not contradiction when we say that the public welfare would be greatly benefitted by police suppression of the whole nasty business.

WHERE IS MAD ANTHONY WAYNE?

—As the result of a conversation recently held between Mr. George W. Childs, of this city, and Mr. Benjamin Whitman the historian of northwestern Pennsylvania, it would seem to be something of a problem as to just where repose the remains of General Anthony Wayne. It seems that he died and was buried at Erie. Ten years later, when the coffin was opened, the body was found to have preserved its form, but to have assumed the ap-

pearance of a chalky substance. This substance was scraped off and, with the uniform, reburied at Erie, while the bones, after being boiled, were deposited in St. David's churchyard, near Wayne, Delaware County. The question for medical scientists to decide is as to whether the chalky substance at Erie or the bare bones at Wayne, really constitute the remains of "Mad Anthony Wayne."

ADULTERATION OF TEA.—Sophistication of tea is enormously practiced in China and Japan, as shown by the fact that the United States Tea Inspector of the Port of New York, during ten months, rejected as unfit for use over 1 per cent of the tea inspected, (says Dr. C. Q. Jackson). And when it is considered that this means nearly 400,000 pounds of tea too filthy or too dangerous to use; and when, also, it is considered that the inspector examined but very little of what was imported the extent of the nefarious practice may be surmised. Dr. Jackson goes on to advise that we should buy the best tea we can get. If we buy a one dollar tea we will not only get a purer but a stronger article, of which it takes a relatively smaller quantity to produce the same amount of the "drawn" beverage.

Our own advice is not to use tea at all; for we believe it to be a very unhealthy beverage, but if people will use it then Dr. Jackson's advice is sound.

IS MAN LEFT-LEGGED?—Dr. W. K. Sibley read a paper before the British Medical Association in which he argued that man was naturally left-legged. Standing working with the right hand, there was a tendency to balance on the

left leg. Race paths were nearly always made for running in circles to the right, and the majority of movements (such as dancing, running, etc.,) were more readily performed to the right. In walking, it was natural to bear to the right; crowds as well as individuals did so. Troops started off with the left foot; the left foot was placed in the stirrup or step of the bicycle in mounting; the left foot was the one from which a man took off in jumping. From measurements made by Dr. Garson of the skeletons of the two legs, in 54.3 per cent. the left leg was the longer, and in 35.8 the right. From measurements of 200 pairs of feet, it was found that in 44 per cent. the left, and in 21.5 the right, was longer, while in 34.5 they were equal.

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 WORK PREVENTS CRIME.—So says Warden Cassidy, of the Eastern Penitentiary, than whom no man can be considered a better authority. Idleness, says this gentleman, is the greatest cause of crime, while labor is its greatest preventive, and he tells us that 40 per cent of convicts who are taught trades never find their way back to prison again. What is true of crime, is equally true of health. Idleness is conducive to disease; not, of course, to acute, contagious diseases, directly, but to that lowered condition of vital activity that will favor the reception and development of such diseases if the seeds be around. Activity (not excessive, but mean activity of body and mind) will favor the highest degree of physical health, for motion or activity is one of the fundamental necessities of healthy life.

It is usually believed that it is best to bring a boy or girl up with some

occupation in view, but it has been so regarded rather from a moral than a physical standpoint. Therefore is it that we would impress upon parents the importance of mental and bodily work (not too much) for their children from a hygienic point of view.

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 EFFECT OF CANNON-FIRING ON THE EIFFEL TOWER.—Of all the indispositions (and there were many) created by the late Exhibition in Paris, the most curious was that caused by the firing of the cannon on the Eiffel tower. Every evening, at ten o'clock, when the gun was fired for the last time in the day, it was not unusual to see produced a sort of frenzy among the young female visitors to the Exhibition. Under the already strong impression produced by the illuminations, the luminous fountains, etc., when the gun was fired, they seemed to be seized with a veritable panic. It appeared to them that a sudden catastrophe, such as a great fire, had taken place. Cries of admiration escaped from some, and of terror from others, when fainting, attacks of hysteria, and of prostration occurred. The subject attracted the attention of Prof. Charcot and other physicians.—*Paris Correspondence of The Lancet.*

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 CREMATING THE UNCLAIMED DEAD.—Director Stokley, of this city, very wisely recommends, that, hereafter, all unclaimed pauper bodies, after having been interred for a period of five years shall be exhumed and cremated. When the editor of this journal was, some years ago, a resident physician at Blockley Hospital, he used to wonder, when he would, daily, see pauper bodies dumped into the pits out in the fields, how it would

be when the city would grow up to the boundaries of this section. Well, the city has now so grown, and his mental query was answered a few days ago, when he read in the papers that in excavating for the cellar of a house to be built where these pits once were, a human body was uncovered. But a human body is nothing, so to speak, for there are many hundreds slowly rotting in this section and handsome houses are being built over this *human* foundation. The river is not far away and we doubt not that *malaria* will receive the credit for much of the disease that will be found in these fashionable homes. By all means, cremate the pauper dead and while we are about it, do not forget those that *are not* paupers.

SOME OF THE SOCIAL ASPECTS OF PREVENTION.—Under this heading Dr. G. Wilson read a paper before the recent Sanitary Congress, in Worcester, England, in the course of which it was pointed out that an immense amount of disease was due to heredity, errors in diet, abuse of luxuries, overwork and worry, and other preventable causes. Dr. Wilson pointed out that, as to the first of these causes—heredity—in addition to the diseased offspring resulting from unhealthy parentage, multitudes of maimed and doomed children resulted from unsuitable or imprudent marriages, apart from diseased parentage. Unthriftiness in marriage too often led to intentional neglect of the children amounting to culpable homicide. He doubted whether public opinion was advanced enough to enforce a certificate of health on the part of persons about to marry, but he thought some check should be put upon the appalling waste of infant

life by prohibiting marriages unless the man could produce reasonable proof that he was in a position to maintain a wife.

CARE OF THE TEETH.—The *Allgemeine med. Central-Zeitung*, July 24, 1889, states that Dr. Theodor Wiethe's Vienna Pocket Formulary, which has just been issued, contains some useful hints upon the teeth by Dr. Hillischer, a practicing dentist. The latter urges that both adults and children should have their mouths examined at regular intervals, and that, as a regular thing, both the mouth and the teeth should be inspected by a dentist after the occurrence of febrile diseases, in the beginning of pregnancy, and after confinement. He regards thymol as the most suitable addition to mouth washes; for, in a dilution of 1 to 80,000 it checks the development of micro-organisms but is not irritating. He recommends the following formula:

R Thymol 15 grains.
 Alcohol 2 pints.
 Powdered cochinel . . . 45 grains.
 Filter and add.
 Oil of peppermint . . . 45 minims.
 Cinnamon 23 grains.
 M. Sig.—Teaspoonful to a glass of water.
 —*Med. and Surg. Reporter.*

POISONING BY IRISH POTATOES.—Dr. Cortial gives in the *Archives de Médecine Militaire* the history of a series of cases which should prove of interest, because they are apt to be very frequent. In the space of two days 101 men of a battalion of infantry were attacked with symptoms of poisoning more or less severe. These symptoms were principally an intense headache, dilatation of the pupils, colic, diarrhœa, thirst, fever, pain in the epigastrium, vertigo, nausea,

sweats, troubles of vision, cramps, etc. The intoxication was evidently due to the food, and after successively putting aside various articles it was suspected that the potatoes were at the bottom of the trouble and they were interdicted at the end of 48 hours. From this moment there were no more new cases. The following explanation of the attack was given. The purveyor, who had been instructed to furnish new potatoes, had substituted very small ones forming simply the buds which spring from old potatoes. Now, it is known that these buds, like seed potatoes and green potatoes, contain solanine, which gives rise to symptoms similar to those mentioned above. Such buds should, therefore, be proscribed as articles of food.

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 GATHERING AN ICE SUPPLY.—As the time approaches for the gathering of the yearly ice-supply, it would be well for all to remember that impure ice is as dangerous as impure water, and as readily found.

Ice for domestic use should never be gathered from a source where the water before freezing was unfit for drinking purposes. The idea entertained by some that water, in freezing, eliminates its impurities, is a dangerous theory because it is false. Epidemics have been traced to the use of polluted ice. Analysis and microscopic investigations have shown ice to contain large quantities of organic matter, as well as bacteria, which became active when the ice was melted. The germs of typhoid fever, and probably of other diseases, may be imprisoned in ice, and after liberation, by melting, become active in the production of disease. These are facts well known in sanitary science, and they should be

equally well understood by the people.

Be as guarded in the selection of ice as in the choice of a supply of water. Gather ice only from clean streams and ponds. Purchase of no dealer who does not follow this rule.—*Sanitary Inspector.*

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 SOMETHING ABOUT CATSUPS.—Dr. C. Q. Jackson tells us that we should avoid a highly colored article, for the chances are that such coloring matter has been added to disguise the dark color of half-ripened or rotten tomatoes. Again, don't buy a low-priced article. When you see an array of catsup bottles in a window with a price card on them, showing they are being sold at half the first grade price, don't buy that catsup; it is not fit to go into a human stomach. The writer has known of a bargain hunter who walked four squares out of her way to get a catsup that was sold five cents cheaper (?) than better grades. Examination showed that catsup to be filthy; it was a network of moldy fiber. Considering how long a bottle of catsup will last, five cents is a very small saving to the purchaser, yet that much difference in price means a great deal to the manufacturer, consequently he cannot afford to put as good tomatoes in it nor to make it up so carefully as the better quality, so that this grade contains most of the rotten tomatoes, the sweepings, etc., all colored up nice and red with rosaniline. Whose fault is it that this kind of preparation is on the market—the manufacturers? Not exactly. It is the fault of the bargain hunter, who wants to get something for nothing—the bargain hunter who holds a five cent piece so close to her eye that she cannot see the dollar behind it.

CHEST TROUBLES AMONG ATHLETES.—“What a number of our athletic young men seem to suffer with chest troubles. In one of my letters telling me all about Miss Mary Wheeler’s engagement to Count Maximilian von Pappenheim, I read with regret that Dick Elliot, who married Mrs. Wheeler’s eldest daughter and who is a perfect amateur champion in sports of every description, has been suffering from pulmonary affection. The same sentence told me that he was better, but the fact is another instance of the bad after effects which are liable to come from the exposure of limbs, which your rowing, boxing and running man seems to think necessary to his prowess. It looks very picturesque, no doubt, to see a muscular young fellow shooting his skiff on the Schuylkill with nothing more on his brawny chest and back than a thin undershirt and only a pair of flannel knickerbockers and stockings on his nether limbs. But every now and again he has to lay on his sculls so as to avoid the swell of a passing steamer, and then the cool wind gets in its work and lays its seed for future growth. Surely a sleeveless jacket of stout knitted worsted or chamois skin would not impede the proper play of the arms, and lungs and kidneys at least would then be protected.”—*Society*.

—“THE SKELETON IN THE CELLAR.”
—We are not infrequently reminded that “*every family has its skeleton in the closet*,” but we are probably not so familiar with the fact that many families have their skeletons in, or, we should rather say, under, the cellar. It is a fact that in many of our rapidly growing American cities, disused burial grounds are utilized upon which

to erect dwellings for the living and so it is that under very many of our cellars might be found the festering remains of what was once a human being. It has been recently stated that in what is now one of the most populous districts of our city, was formerly located the burial place of hundreds of victims of the Yellow Fever epidemic of 1793, and, in one instance, a coffin, containing the corpse of a man was exhumed when digging the cellar for a house in this neighborhood. If we would have health, the putrefying dead must not commingle with the living, which bears the moral that “Gods Acre” should be a sacred place; sacred to the memory of those who have gone before, and it should not be encroached upon by the living; it should be forever consecrated to the purpose for which it was originally designed.

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THE LUCKY PRINCE OF WALES.—If we are to believe the newspapers, luck has not yet deserted the heir-apparent to the English throne. Unlike the late unfortunate, for-a-short-time, Emperor, Frederick, who when he departed from health, did so with a disease so terrible as to defy all medical skill, the Prince has assumed a disease, that, paradoxical as it may seem, will, if he heeds the advice of his physicians, be the means of restoring him, practically, to health. What we mean is that he is a lucky man, who after having led an indulgent life until he is close on to fifty years of age, discovers, in its incipency, such a disease as Bright’s. Of all slowly-progressing chronic diseases, this, as a rule, is the slowest, and if a man, with an ordinarily good constitution will only take proper care of himself,

he has no reason to fear that his days will be materially shortened.

Until the race has materially improved, physically, nearly every man of fifty is quite sure to have something the matter with him, and if we had a choice, we would select the incipient stages of Bright's Disease, provided we were conscious of the fact, so that we might regulate our life in accordance therewith.

EVERY MAN HIS OWN ANCESTOR.
—“Every man is his own ancestor, and every man is his own heir,” says Dr. H. F. Hedge, “He devises his own future and he inherits his own past.” How eminently true are these words every man who reflects will concede. Dr. H. C. Wood recently remarked that he doubted whether there is such a thing as hereditary transmission of most diseases, the only hereditary influence being the inherited lack of power of resistance to the disease-producing agencies.

Dr. Wood, we believe, has given us, in a nut-shell, the whole that there is of value in this question of heredity. The disease is not transmitted, but a weakness that renders him who inherits it less able to antagonize successfully the cause of the disease when it assails him.

We go further and believe that it is in the power of the individual, by a due attention to hygiene, to so fortify this inherited weakness that he can resist the disease-producing agencies. In other words heredity need not play any role of importance in the production of disease, if the individual so wills and so acts.

Therefore, can we truly say, with Dr. Hedge, that every man can really determine the effects of his own ancestry and he can pre-arrange that which

he himself will inherit from himself, from his mode of life.

It is eminently true that each person who reads these words is now, at this moment, inheriting his own past, while he is, at the same time, devising his own future.

CURIOUS TRANSMISSION OF SCARLET FEVER.—The *Boston Post* is responsible for the story that in 1846, a boy, eight years old was taken down with scarlet fever, and died. One of the principal amusements of his illness had been looking over a large picture book. After his death this, with several other useful playthings, was packed away in a trunk. Twenty-six years later, in 1872, the trunk was taken to England. The trunk was opened the second day after its arrival, and the picture book was taken out and presented to a boy two years old. During the next fortnight the little fellow was attacked with scarlet fever. It was a wonder to the doctors who were called in consultation how the disease had been contracted, as there had been no scarlet fever in the town for years. At last it was suggested that the picture book might have transmitted the disease, and the medical men in attendance, on being told the facts connected with it, agreed that it had retained the poison for twenty-six years and then communicated it to the child.

This appears to be one of the instances in which scarlet fever from some unknown cause developed coincidently with the handling of articles used by a patient who had the disease many years ago.

The comment is from the *Med. and Surg. Reporter* and we do not entirely agree with it. We believe it is a fact that grains of wheat or corn taken from the casings of Egyptian mummies, have, when placed in suitable soil, with suitable surroundings sprouted and grown. If these seeds of cereals may lie dormant for more than three thousand years without losing their power of growth and reproduction, why may not the seeds of scarlet fever lie dormant, yet preserve their virulence, for twenty-six years.

CONVENTIONAL MOURNING OR HEALTH?—Which shall it be? The time has come to choose. Unmitigated mourning must go. A movement has been started in England to put an end, if possible, to the present irrational mourning costumes that exact of women great personal inconvenience, physical injury, and disastrous expense. The conventional costume of a well-bred widow, for instance, possesses every known quality of unhygienic, non-æsthetic, and costly dress. Proper exercise while she is wearing it is out of the question. Seclusion is secured in ways less barbarous perhaps than inducing deformity of the feet, yet our occidental mourning customs effectually keep women within doors. The heart of the stoutest warrior might quail within him if a quiet stroll required the wearing of two crape veils, each six feet long originally and only slightly shortened, but not lessened in weight, by a hem half a yard deep, one veil to be worn over the face and the other to hang down the back! The widow's gown must be inconveniently long, the outside garment must cling, and both must be made of an inelastic, non-inspiring material. Add to this that within, which passeth show, and the picture is pretty black. The husband who loses his wife escapes such outward trappings, not being forced to adopt any special habiliments that can incommode or injure him. A simple band around the hat announces the fact of his changed circumstances and secures freedom from idle questions. Strange inconsistency of custom that thus discriminates between men and women, and always to the disadvantage of women in point of health!

In this new crusade of common sense Lady Harberton takes the lead, setting forth in a recent article the reasons why existing mourning costumes should be abandoned by all sensible women. The materials now in use are in themselves injurious, the dyes being often of a poisonous nature and frequently injuring the skin and ruining the complexion. What woman who indulges in conventional mourning escapes the staining process resulting from damp crape? Only the victim can know the energy and perseverance required to remove from brow and neck the literal clouds that gather from such a cause. The harm to the exterior of the body is easily perceived. Not less injurious is the irritation to the respiratory tract caused by minute loose particles of poisonous crape. To the pang of separation is added the thought that our loved ones are condemned to suffer physical discomfort for a year or two, and, possibly, disease for an indefinite period.

Lady Harberton suggests that persons should provide in their wills that no mourning should be worn for them. This might have a modifying effect upon things as they are. But, of course, the whole matter, like every other social and domestic question, rests entirely with oppressed woman-kind. Women are not driven into mourning at the point of the bayonet. The Quakers get along very well without wearing it at all. The sincerity of their grief is not questioned because they remain clad in every-day attire. If precedent is needed, it is pleasant to know that it already exists, and to realize the fact that scores of calm-browed, earnest-hearted nineteenth-century women have not needed mourn-

ing as a protection or a means of expression in the hour of affliction. Grief would seem to be a personal affair, sacred to the individual, needing no outward sign of its having taken the world into its confidence, and having thus cast something of a shade over the joy of living—said joy not being an inexhaustible mine in any community. Rather is the stock in perpetual need of increase.

The moral influence of mourning is even more to be deplored than its physical effects. Gloomy garments, darkened rooms, all the subdued life of the house of mourning, depress the powers, lower vitality, and absorb an undue quantity of domestic ozone. Such unwise fashions tend to stultify the wonderfully recuperative powers of time and nature. Hugging grief to keep it warm is a poor business, and so is the worship of sorrow. Speed the day when it shall be considered unbecoming to wipe our eyes upon the public or to dust our neighbors' shelves with any personal woe! All that Diogenes asked of Alexander was that the king should stand out of his sunshine. And we all have a right to demand of society that it take its mourning out of humanity's sunshine.—*New York Medical Journal*.

A FATAL WELL.—*Eleven cases of Typhoid Fever from one well.*—The drawing on the opposite page represents "Dry Run," a small village, of 200 inhabitants, in Franklin County, where the recent occurrence of an epidemic of typhoid fever has afforded to Medical Inspector R. Lowry Sibbet the opportunity to make, to this Board, a report of extreme interest in reference to this peculiar disease; pe-

culiar, because it is a disease that is nearly always more or less prevalent nearly everywhere, yet there is no disease that can be more readily prevented by the PEOPLE. Mind, we say the people, in great big letters, for we do not wish to assume a responsibility that does not fairly belong to us. We can *teach*, but the people must *act*.

Well, as to this village. Dr. Sibbet tells us that the well on the premises of George W. C. is in the lower part of the village and the trend of the adjacent surface is towards it. Heavy rains fell on the 30th and 31st of May last, filling this well with surface water; while the drainage from a dozen or more of stables, pig-pens and privies being in this direction, additionally polluted the well. Remember this well was on the premises of G. W. C.; well, in the family of G. W. C. there were seven persons (including himself and father, sisters and brothers) seized with malignant typhoid fever, while the same disease attacked four others, not members of the family, but who had used the water from this well, making eleven, in all, who contracted typhoid fever from this one fatal well, and, of this number, three died. When we consider that one in ten is the usual death rate in this disease, we can understand how malignant was the disease from this well, for we have the usual death rate nearly trebled.

The other wells in this village, were, of course, also polluted, but none of them to the same extent as this fatal one, hence we have elsewhere reported fifteen *milder cases none of which proved fatal*.

As additional evidence that this particular well was the origin of the serious mischief it is noted that, counting from the 24th of June, when the attend-

C.C. MARK CAVES IN THE FIELDS

**HOUSES.
STABLES
PIGPENS & PRIVIES.
WELLS & SPRINGS.**

D.W.=DEEP WELL
S = SPRINGS



ing physician forbade the use of the water from this well, *no more malignant cases occurred*. It is not at all unlikely, indeed, it is more than probable that very many villages throughout the land are in the same condition as "Dry Run." Wells, it must be remembered, are extremely dangerous sources of water supply.

"We cannot suppose," concludes Dr. Sibbet, "that this epidemic originated in exhalations from the earth, or that it has been continued by the inhalations of foul odors or by *contact with the sick*." "The rain-storm, the overflow of wells and springs and the *sudden appearance of twenty-six cases within one week* preclude the supposition."

THE DEADLY OVERCOAT.—We protest against the indiscriminate use of the thick and heavy overcoat, says the *London Lancet*. We would rather see men in fairly robust condition, especially if young, clad warmly next the skin, and wearing either a light top coat or none at all. There can be no doubt that the habitual use of great coats is indirectly accountable for the chills which they are intended to prevent. Were the overcoat worn continuously it might attain its object. Its intermittent use, even when ample underclothing is worn, affords no solid guarantee of safety, but rather the reverse.

The man of sedentary habits has especial need to remember this. He emerges daily from a warm breakfast room clothed in his ordinary winter garments, with probably woolen underwear, and over all the heavy ulster or top coat. After a short walk he finds that the sense of warmth he began with is more than maintained.

He arrives at his office or place of business, and off goes the overcoat, though the air of the newly opened room is as cold as that without, and draughty in addition. During the day perhaps he travels to and from adjacent business houses wearing only his house clothing. The overcoat is laid aside till closing time reminds him of the journey home. The frequent result is that somehow, between the hours of his departure and return, he is chilled. No doubt he would run as great a risk if, lightly clad, he were to face the rigor of a winter day. In this case, however, exercise and habit might do much to develop the power of endurance, and there would, at all events, be less danger of sudden cold acting upon a freely perspiring surface.

Woolen underclothing represents a state of healthy comfort intermediate between these extremes, and more resistant to chill than either.

CONFECTIONERS' DISEASE.—A disease, peculiar to confectioners, has been recently observed in France. It occurs principally in persons engaged in the manufacture of candied fruits and "*maron glaces*" or candied chestnuts. Five cases observed by Dr. Albertin, of Lyons, and described in the *Gazette Hebdomadaire*, March 19, 1889, well illustrate the nature of the disease. The affection is restricted to the nails of the hands, and usually first makes its appearance at the sides of the nails, this portion becoming loosened and raised up, the nail losing its polish and becoming dark. In more advanced cases an inflamed swelling appears at the base of the nail. The nail is rough, scaly, and in some cases broken in several fragments; but is never cast off in its entirety. In the

earlier forms of the disease very little pain is experienced and the patient is able to go on with his work.—*Med. and Surg. Reporter.*

DON'T'S FOR ENGINEERS.—When we recently read the following directions for engineers, we could not help but think how applicable, with slight modifications, they are to the engineer who is running the human machine, (the body.)

Don't expect too much of a steam boiler. (Nor of the human body).

Don't overwork it, for overwork has a bad effect on a boiler. (So it does on the human body).

Don't neglect it, for a boiler can't be expected to keep itself in good condition. (No more will your body).

Don't overheat it, for a boiler is very sensitive to extreme heat. (So is your body).

Don't cool it suddenly, for a boiler has a way of resenting such treatment that is apt to be expensive to you. (So with your body ; as you will realize when you are laid up with rheumatism, neuralgia, pneumonia, Bright's disease or the like).

Don't let an inexperienced man fire it, for a boiler will show by the way it performs its duty that it knows the difference. (If you do not learn how to care for your body, it, also, will plainly show that it is aware of your ignorance.)

Don't work it when out of order, for a partly disabled boiler is likely to become permanently so if kept under steam. (This is eminently true of the human body.)

Don't neglect making necessary repairs to your boiler, for delay means danger in such cases. (Ditto for your body.)

Don't let its tubes or pipes become choked or clogged, for its work will be decreased, and it might be dangerous. (So will it be with you if your bowels and kidneys, etc., do not act well).

Don't let it stand in a damp place, for damp makes rust, and rust is hard to remove from a boiler. (So does it make pneumonia, rheumatism and a host of ills).

Don't fail to have it examined from time to time by competent inspectors, for changes are continually taking place inside of a boiler

and some of them if not noted and remedied, lead to disastrous results.

(If we were writing a dissertation on the advantages of regular, periodical inspections of the human body by an intelligent physician, we could not give any better reason for such a recommendation than is given above in the case of the boiler.)

BUREAU OF INFORMATION.

THE EFFECTS OF SEWER GAS.

EDITOR ANNALS OF HYGIENE.—Can you befriend a subscriber by stating in your next number what effect the continual breathing of air vitiated by, or impregnated with sewer gas in a sleeping apartment, which escapes from a water closet or from pipes leading from a water closet abutted against an adjoining wall would have upon the human system? How would it be likely to affect the general health?

F. R.

The constant inhalation of sewer gas would have an extremely prejudicial effect on health. It is a fundamental law of health that we must breathe pure air and if the atmosphere that we inhale is impregnated with sewer gas, that is, with the gases that arise from organic putrefaction, it is obvious that such air is not pure. If the gases coming back to our rooms from the sewer should happen to contain the particular germs of any special disease and if our bodies are in a condition of receptivity for this particular germ then we will contract this special disease. If, however, the special germ be wanting and the sewer gas that we are continually inhaling be simply the results of organic putrefaction, then we will have produced a condition of general but illy-defined ill-health such as is now fashionably designated as "malaria."—**ED. A. OF H.**

BITING THE NAILS.

EDITOR ANNALS OF HYGIENE.—Will you kindly give me some suggestion whereby I can break my ten-year old girl of the disfiguring habit of biting her finger-nails.

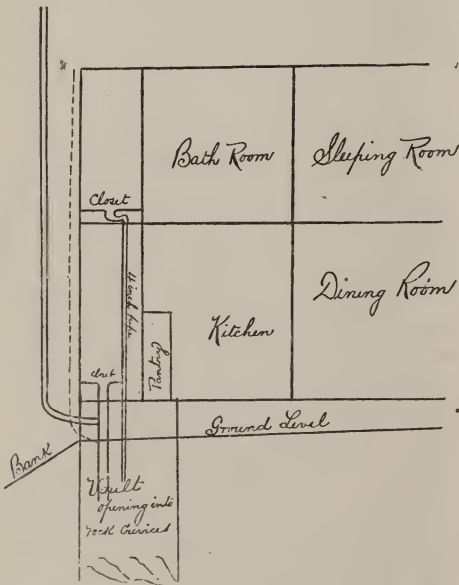
S. R.

The ordinary remedy for this habit is to place some bitter powder on the ends of the fingers, such as quassia or gentian, but it seems to us that a better plan would be to make the child continually wear gloves until the habit is overcome. It would be impos-

sible to bite the nails without removing the gloves, and, since thoughtlessness is, almost universally, at the bottom of this habit, the presence of the gloves would be a constant reminder. If you find that the biting still goes on, then you may know that it is not a thoughtless habit, but a deliberately vicious practice and the time has arrived for effective punishment.—ED. A. OF H.

SMELLS IN THE KITCHEN.

EDITOR ANNALS OF HYGIENE.—Please examine rough sketch and give me your opinion if this *proposed ventilation*, as per the *heavy lines* of pipe, galvanized, three inches in diameter, running above top of the house, will carry off the smell which comes from pantry and into the kitchen, we have water and trap for upper story closet, but none for the lower floor. Also, all the extra rain water goes into the closet vault. J. M.



We are compelled to answer this query in the negative. There will always be smell and, worse than mere smell, there will be great danger to health so long as the untrapped closet remains where it is. No ventilating pipe will prove an absolute safeguard. If we interpret this diagram correctly, the vault is *under the house*, and, if such be the case, our correspondent is living over a mine that may explode at any moment and throw the germs of disease up into his house.—ED. A. OF H.

STATE BOARD OF HEALTH

AND

VITAL STATISTICS,

OF THE

COMMONWEALTH OF PENNSYLVANIA.

PRESIDENT,

GEORGE G. GROFF, M.D., of Lewisburg.

SECRETARY,

BENJAMIN LEE, M. D., of Philadelphia.

MEMBERS,

PEMBERTON DUDLEY, M.D., of Philadelphia.

J. F. EDWARDS, M. D., of Philadelphia.

J. H. MCCLELLAND, M. D., of Pittsburg.

HOWARD MURPHY, C. E., of Philadelphia.

GEORGE G. GROFF, M. D., of Lewisburg.

S. T. DAVIS, M.D., of Lancaster.

BENJAMIN LEE, M. D., of Philadelphia.

PLACE OF MEETING,

Supreme Court Room, State Capitol, Harrisburg, unless otherwise ordered.

TIME OF MEETING,

Second Wednesday in May, July and Nov.

EXECUTIVE COMMITTEE,

PEMBERTON DUDLEY, M. D., Chairman.

HOWARD MURPHY, C. E.

JOSEPH F. EDWARDS, M. D.

BENJAMIN LEE, M. D., Secretary.

Place of Meeting,

(Until otherwise ordered).

Executive Office, 1532 Pine St., Philad'a.

Time of Meeting,

Third Wednesday in January, April, July and October.

Secretary's Address,

1532 Pine Street, Philadelphia.

Bureau of Registration and Vital Statistics.

Department of Internal Affairs,

State Capitol, Harrisburg.

State Superintendent of Registration of Vital Statistics.

BENJAMIN LEE, M.D.

SPECIAL REPORT.

ANNUAL REPORT OF THE SECRETARY OF THE STATE BOARD OF HEALTH OF PENNSYLVANIA.

To the Honorable, the State Board of Health and Vital Statistics of the Commonwealth of Pennsylvania,

GENTLEMEN:—It has been the custom of your Secretary in presenting his Annual Report, to address it to the President of the Board. A change which has taken place in the membership of the Board, has, however, rendered that position vacant. The Secretary believes that he only expresses the cordial sentiments of the Board when he testifies to the fidelity with which the retiring President, Dr. David Engelman, discharged the duties of his office, both as a member of the Board and as its presiding officer, and the regret which is felt in severing the connection. The fact that he was, at the time when the term of his appointment expired, serving his third consecutive term as President, is a sufficient evidence of the esteem in which he was held by his associates. He is succeeded upon the Board by the Hon. S. T. Davis, M.D., of Lancaster. This gentleman, like his predecessor, adds to his medical education and training the advantage of a considerable legislative experience which will be of use to the Board in shaping its proposed enactments for the better protection of the health of the people of the State and greater efficiency and uniformity in sanitary administration. The active and intelligent interest taken by him in advancing such legislation while a member of the House of Representatives, is a guarantee that he will bring to the duties of his new position both energy and the resources of a well-stored mind alive to the necessity for sanitary reform.

During the past year the Board has held three special meetings.

The regular meetings were held November 18th, 1888, May 30th, 1889, and July 10th, 1889. The special meetings were held November 30th, 1888, February 27th, 1889, and September 27th, 1889. Full details of these meetings will be found in the minutes.

In obedience to that clause in the law creating the Board which makes it its duty

“to suggest further legislative action or precaution deemed proper for the better protection of life and health,” the Secretary drew up early in the year a number of bills which were approved by the Board at a special meeting and duly presented to the Legislature. These measures were introduced in the House of Representatives and ably supported by the Hon. James Wilson Walk, M.D., of Philadelphia; while in the Senate the Hon. M. C. Watson, of Shenandoah, used his influence in their favor. It is the misfortune of legislation of this kind, that it is compelled to stand entirely on its own merits; and that public sentiment, which legislators feel themselves bound to consider, is not sufficiently advanced to appreciate those merits in many instances. There are no private or local interests to be furthered by it, and the number of those who are public spirited enough to look beyond these into the broad field of the general good is comparatively small. The member of the legislature who champions the cause must do so with the consciousness that he is in no way contributing to his own political preferment, or increasing his popularity with his constituents. The friends of sanitary reform must therefore be content to move slowly. In accordance with the suggestion of the Board, however, an important step was taken in the establishment in each branch of the Assembly, of a “Standing Committee on Public Health and Sanitation”; important, not simply as affording a means whereby these subjects may receive more attentive consideration at the hands of that body, but as an index of the steadily increasing recognition of the necessity for intelligent legislation for the protection of the lives and health of the people of the Commonwealth. A conference between the Board and the “Senate Committee on Public Health and Sanitation” left no doubt in the minds of the Board that the committee was desirous to further all such measures. It is a question whether the large size of the corresponding committee in the House of Representatives is not a bar to the careful consideration of these subjects, and whether a smaller committee, carefully selected with a view to the special acquaintance of its individual members with such questions would not be of greater service. It is true that very important measures introduced by the Board, such

as that for establishing local boards of health throughout the rural districts, for ensuring the registration of vital statistics, for preventing the pollution of streams, and protecting the sources of water supplies of towns, failed to pass. But on the other hand those which most nearly affected the present working of the Board and the passage of which indicated the confidence of the Legislature in the judicious character of that work were successful. A bill in which the Board took an active interest for the supervision and repression of the disease known as "Glanders Farcy," in horses, placing the matter under the control of the Board of Agriculture, also became a law. There is, therefore, every reason for the Board to look forward to the next session of the Legislature with the hope that much may be accomplished toward inaugurating a thorough system of sanitary administration throughout the Commonwealth. The Secretary is constantly in receipt of inquiries of the most urgent nature from boroughs all over the State inquiring how they shall proceed to establish boards of health. To these requests he is compelled to return the disheartening and humiliating response, that no legal provision exists for the creation of these essential safeguards to the health of their communities. This subject is earnestly recommended to the consideration of the Committee on Sanitary Legislation. Means should at once be taken to arouse popular sentiment on this important matter in order that the Legislature may feel that it will be backed up by public opinion in passing an enactment for this purpose.

At the regular meeting held May 30, 31, and June 1, two physicians were arraigned before the Board on the charge of having issued false certificates of death in order to enable bodies of persons who had died of infectious diseases to be transported by rail. In one instance the body thus transported was, with good reason, suspected of having been the cause of an outbreak of scarlet fever in a town in Ohio. The attention of the Secretary was called to this outbreak, which was attended by mortality, by the Secretary of the State Board of Health of that State. On careful examination of the accused, it appeared that in each case, the physician was not the regular attendant, that he was called in just before the death of the

patient and was in ignorance of the previous history of the case, and that he gave his certificate, without intention of deceit, based on the symptoms observed at the time. The Board therefore absolved them of the charge of having *intentionally* issued false certificates of death, but admonished them never again to issue a certificate without a full knowledge of the history of the case for at least six weeks previous to death. This is a crime the seriousness of which it would be difficult to overestimate, and yet, strange to say, the statutes of Pennsylvania contain no reference whatever to the subject. The only restraint upon thus scattering broadcast the seeds of disease, is to be found in the regulations of railroad and other transportation companies, the ordinances of certain cities and the regulation of this Board. The Secretary would suggest to the Board the expediency of referring this subject to the Committee on Sanitary Legislation, with instruction to draft a bill which shall place the matter under proper control.

In connection with the meeting at Pittsburgh, the Board held a Sanitary Convention for the purpose assigned to it by law, of "disseminating information upon subjects pertaining to the preservation of the public health," more particularly in large cities situated on water-courses, and of exciting an interest in the public mind in the discussion of sanitary subjects, generally. The annual address was delivered before this convention by Dr. Jackson Piper, President of the State Board of Health of Maryland, on the subject of "The Sanitation of Country Towns and Farm Houses." The address was full of interest and instruction and was listened to with deep attention. A very valuable paper was also read by Dr. Henry B. Baker, Secretary of the State Board of Health of Michigan on a cognate topic "A Plea for Public Health Work in Villages." Many other useful contributions to sanitary science were brought before the Convention, the greater number of them by citizens of Pittsburgh and its vicinity. Among these may be noticed a sanitary history of Pittsburgh, by the late Health Officer, Crosby Gray, Esq., and a paper on the Ventilation of School Buildings by M. D. Goff, LL.D., Chancellor of the Western University of Pennsylvania.

Thus it will be seen that the object of inducing the leading minds of the community

where the convention was held, to seriously consider such subjects was attained; and while, owing to peculiar circumstances presently to be detailed, the attendance was at no time as large as had been hoped, yet the publication of abstracts of the papers in the daily press of Pittsburgh multiplied the local audience many fold, while their reproduction in full in the ANNALS OF HYGIENE brought them to the notice of an intelligent public, through the State and country. Much good was thus undoubtedly accomplished, and the Secretary has no hesitation in recommending that a similar convention be held at the time of the next regular meeting of the Board. A small city where there are comparatively few distractions, would probably furnish a larger audience, and create greater local interest.

It has been already said, however, that peculiar circumstances combined to interfere with the attendance on the Pittsburgh convention. The rain fell in torrents and there were rumors even on the evening of the first day of a wash-out on the Pennsylvania Railroad, which made members from a distance anxious with regard to the possibility of delay on their return. The day following, all interest was centered on the wreckage which swept down the swollen Allegheny, and rumors became a certainty that a serious freshet with loss of life had occurred, but accounts were still conflicting and unsatisfactory. The news of Sunday morning, however, left no room for doubt that a cataclysm of unparalleled proportions had swept the valley of the Conemaugh demolishing the flourishing mountain city of Johnstown, and filling the river with dead bodies and carcasses. It was evident that a moment was not to be lost if the water supply of the two great cities which lie at the mouth of the Allegheny was to be preserved from contamination of the most dangerous and revolting character. It was equally clear that the conditions existing at the scene of disaster were such as to breed pestilence if the most active measures were not taken to prevent wholesale putrefaction and to provide for the wants of the thousands of homeless survivors. Accordingly, your Secretary, accompanied by Dr. George G. Groff, who kindly volunteered his services, and for whose wise counsels and ready help during the earlier period of this great emergency

the Secretary desires here to express his deep sense of obligation, took the first available train for the scene of disaster. Arriving near night-fall at the village of Nineveh, about nine miles from Johnstown, it became evident that this was the point at which work for the protection of the water supply must begin, because just here a dam and a bend in the river detained large numbers of bodies and dead animals. One hundred and sixty-two bodies were found here, most of them already embalmed and awaiting identification. From here telegrams were sent to the sheriffs of the counties bordering on the Conemaugh, Kiskiminitas, Allegheny and Ohio rivers, instructing them, in the name of the Board, to summon posses to patrol the rivers, tear down the drift heaps, and remove the dead bodies, both of human beings and of domestic animals, adding that this was absolutely necessary to protect their counties from pestilence. At the same time messages were sent to Superintendent Pitcairn of the Pennsylvania Railroad and to Adjutant-General Hastings, informing them of the situation at this point, and urging the importance of putting a large force of laborers with competent bosses at work at once.

A communication was also addressed to Dr. Hammer, the Coroner of Westmoreland County, notifying him that the emergency was such that in the interests of public health certain formalities might be dispensed with, which would necessitate the detention of bodies after recognition.

Early the following morning, Old Nineveh on the opposite side of the river was visited. Between twenty and thirty bodies were lying here awaiting identification. Instructions were given for disinfecting the premises and embalming the bodies; and the coroner not having made his appearance, a Justice of the Peace was empowered to empanel a jury and hold an inquest.

Arriving at Morrellville about a mile and a half below Johnstown by the first morning train, General Hastings and Mr. A. J. Moxham, chairman of the local committee, were at once conferred with, and the headquarters of the Board established in the same room with those of the Committee, in order to avail ourselves of telegraphic, mail and messenger service, as well as to be in constant communication with the Committee. The Chairman of this Committee, as well as

Mr. J. B. Scott, of Pittsburgh, who on the fifth day of June, having been elected by the representatives of the various boroughs as Director, with absolute authority, assumed the reigns of power, while naturally enough not recognizing fully the authority of the Board, were very ready to avail themselves of its assistance in all matters of sanitary precaution and police. To the latter gentleman, especially the Secretary desires to make his acknowledgements for his constant readiness to co-operate with him in all such measures and his intelligent appreciation of the necessities of the situation from a sanitary stand-point. The first day was devoted to a thorough inspection of Johnstown and making the acquaintance of physicians and others who might be useful in the great work which lay before the Board. Disinfectants were ordered in considerable quantities from Pittsburgh, and the hospital which had been extemporized in a lager beer saloon under the name of the Bedford Street Hospital, was made the temporary depot for disinfectants. On the second day, the Secretary commenced the organization of a Sanitary Relief Corps, naming Dr. W. E. Matthews of Johnstown, as its chief. With this exception the corps was composed entirely of physicians and others from a distance who had come on the first intelligence of the catastrophe to render aid to the sick and wounded, and who, finding their services uncalled for in this capacity, generously volunteered to perform the more laborious and dangerous duties of sanitary police officers. Through fire and flood, under drenching rains and through seas of mire, these devoted men prosecuted their arduous and often revolting labor of recovering the dead, dragging out and burning carcasses, and distributing disinfectants. Among those who thus distinguished themselves may be named

Surgeon P. M. Carrington, U. S. Marine Hospital Service.

Drs. James McGrew and Frank J. Phillips, both of Pittsburgh.

Drs. Howard Fussell and J. Allen Smith, both of Philadelphia.

Dr. White, of McKeesport. All of Pennsylvania.

Dr. A. J. Graham, of Peoria, Illinois, and Dr. F. W. Marvell, of Atlantic City, N. J.

Dr. Matthews, although suffering from painful injuries sustained during the flood,

which had swept away all his earthly possessions, gave himself wholly to the work of organization and supervision, which he prosecuted faithfully and judiciously during the entire summer.

A telegram was received on the same day from Supervising Surgeon-General Hamilton of the U. S. Marine Hospital Service announcing the readiness of his Bureau to render any aid in its power and the fact that he had ordered Surgeon Carrington to report to the Secretary from Pittsburgh. In reply a request was sent for disinfectants which was promptly attended to, all that were available being sent from Washington and a large consignment from Baltimore.

A letter was also sent to his Excellency Governor Beaver, reviewing the situation at large and declaring the necessity for State intervention both with men and means in order to prevent impending disease.

Dr. R. Lowry Sibbet, Medical Inspector to the Board for the Cumberland District, reported for duty and the day following was deputed to make an inspection of the Conemaugh Valley, with a view to determining the needs sanitary and personal of the survivors in the different boroughs. During the week that he remained, he accomplished important work in this field. The Woodvale Chemical Works were fortunately out of the reach of the flood, and the proprietor generously furnished the Secretary *carte blanche* for all the coppers that might be needed. One of the Sanitary Corps was dispatched thither with a wagon, reaching the spot at great personal risk, owing to the washed condition of the road, and a new place was selected for the storage of this and other disinfectants on the track of the Baltimore and Ohio Railroad, which was now sufficiently freed from debris to allow trains to come into the city.

On the third day the force was greatly strengthened by the arrival of Superintendent of Health Baker from Pittsburgh with a large squad of uniformed sanitary police, and also of a similar body from Allegheny, detailed by Mr. James Bradley, the health officer of that city.

Dr. Carrington having also reported, was placed in charge of a portion of this force with instructions to disinfect all dead bodies and carcasses which could not be extricated from the wreckage. The remainder under

Dr. Fussel, were detailed to extricate and burn dead animals. Being entirely without implements or vessels for dissolving and applying disinfectants, the Secretary accompanied Dr. Carrington and his force on a search of stores on the only remaining business block of the place, clambering over drift and wreckage on a level with the tops of third story windows in order to reach them, and succeeded in obtaining a few damaged buckets, coffee pots and watering pots, with which they made shift to do the work until more could be ordered from Pittsburgh.

On the fourth day the places of those men were to some extent filled by ordinary laborers, and the former were set to work to make a house-to-house inspection of all the inhabited houses, with a view to ascertaining their condition, abating house and yard nuisances, and instructing the people in the use of disinfectants, which were freely provided.

An immense, compact mass of drift, covering several acres, from 20 to 30 feet in depth, in which were entangled and buried large numbers of bodies and carcasses, encumbered and entirely concealed the rivers for a distance of half a mile above the stone bridge. The laborers of the Pittsburgh Relief Commission were fully occupied in exhuming the town. Every day was adding to the dangers of contamination of the water supply of the cities below. A cautionary proclamation was forwarded by the Secretary to the Pittsburgh papers, stating the risk, and advising all persons to boil the water before drinking it. Johnstown itself, was fortunately supplied with pure water from reservoirs in the mountains, a fact which contributed much to the preservation of the health of the inhabitants and of the large number of strangers present. Careful supervision of the sources was maintained during the entire summer, personal inspections having been made by Drs. Carrington, Probst and Sibbet and by the Secretary and Deputy Medical Inspector Wagoner. A careful inspection of the enormous mass above referred to from both sides and by going over its surface, convinced the Secretary that its proposed destruction by fire would be impossible even were it desirable; and that forces almost Titanic would be needed for its disruption. Leaving Dr. Groff in charge of the work in Johnstown,

he therefore, on the afternoon of the fourth day, proceeded to Pittsburgh. He now had an opportunity for the first time of obtaining some definite information as to the injuries wrought by the floods in other parts of the State. Based upon this intelligence, a telegram was sent the same night to seven Medical Inspectors of Districts bordering on the Susquehanna and Juniata rivers, instructing them at once to make personal inspection of all the flooded regions in their respective districts, and to employ forces to reclaim bodies and burn carcasses.

The day following a temporary Executive Office of the Board was established in the Chamber of Commerce with the kind assistance of Dr. J. Guy McCandless, brother of the Sheriff of Allegheny County. Two gangs of wreckers of ten men each, with bosses, were commissioned to proceed from the mouth of the Kiskiminitas to Johnstown, carefully searching for dead bodies, and dragging apart or burning all suspicious drift piles. Feeling extremely solicitous in regard to the drift at the stone bridge, the Secretary waited upon the Executive Committee of the Pittsburgh Relief Committee, and endeavored to obtain from that body a promise to undertake its removal. Failing in this he visited Superintendent Pitcairn and Mr. McCrae of the Pennsylvania Railroad Company, on the same errand, but could obtain no further concession than a promise to transport laborers with all possible expedition. A telegram was then despatched to his Excellency Governor Beaver, stating that four thousand men ought to be put to work on this drift at once, and that money was needed for immediate necessities. A written Report of the Inspection of the Conemaugh Valley was also sent him, setting forth the dangers of the situation, declaring the condition a nuisance prejudicial to the public health, and calling upon him, in view of the entire inability of the local authorities to meet the emergency, to furnish at once a sufficient force to remove and abate the same.

To this declaration his Excellency replied immediately by wire—authorizing the Secretary to borrow money for immediate necessities—and, three days later, in person, reaching Johnstown early on Sunday morning, June 9th. After a careful survey of the situation, he decided to furnish the Secretary

men and means to remove the wreckage and filth to such an extent as the Board might deem necessary to prevent the occurrence of pestilential disease.

The Allegheny river had already been patrolled by a steamboat under the direction of the Sheriff of Allegheny County, Dr. Alex. Æ. McCandless, in accordance with the instructions of the Secretary, and a second had been commissioned for another trip of the same kind. Fearing that the Ohio river might become polluted, and thus render the water supplies of towns below, in this State and in the States of Ohio and West Virginia unhealthful, the Secretary on the 8th of June commissioned Captain Wm. B. Rodgers, of the steamer "Tide" to patrol the Ohio on both sides, down as far as the State line, in a similar manner.

Dr. C. O. Probst, Secretary of the State Board of Health of Ohio, having come to Pittsburgh in response to a request of the Secretary, united with him in messages to the Boards of Health of cities on this river, suggesting the importance, for a time, of unusual precautions and vigilant search for dead bodies and carcasses.

Leaving the Pittsburgh office in charge of Medical Inspector, J. R. Thompson, M.D., of the Allegheny District, the Secretary left for Johnstown the same day and was fortunate in meeting at Rockford intersection Surgeon-General Hamilton, who was returning from Johnstown. The experience of this officer in the organization of sanitary relief work in Florida enabled him to make valuable suggestions with reference to the difficulties the Board had to contend with in Johnstown, which it is desired here to gratefully acknowledge.

Detained at Somerset on Sunday morning the Secretary telegraphed instructions to the Sheriffs of all the counties bordering on the West Branch of the Susquehanna and the Juniata rivers, to co-operate with the medical Inspectors in the work of reclaiming the dead and burning carcasses and drift piles.

Under Dr. Groff's energetic and judicious management the organization of a permanent Sanitary Corps of the State Board of Health, composed of resident physicians to take the place of the volunteer Sanitary Relief Corps, the members of which were naturally anxious to return to their homes which

they had left on the generous impulse of the moment, was found to be progressing rapidly.

The entire region from South Fork to Nineveh was divided into twelve districts. Over each of these was placed a Deputy Medical Inspector, whose duty was to make house-to-house inspections, examining carefully the condition of houses, cellars, yards and privies, encouraging and advising the occupants as to the best means of preventing disease, instructing them in the use of disinfectants, noting any cases of sickness and to report the results of their observations at the close of each day to Dr. W. E. Matthews, Chief Deputy Medical Inspector.

On the basis of these reports the work for the day following was mapped out by that officer in consultation with the Board.

During the period in which the region below the Stone Bridge was to a great extent cut off from communication with the central office, Dr. Spencer M. Free, Medical Inspector of the Western Slope District was placed in charge there.

A depot for disinfectants was established in connection with each district office, and from this numerous supply stations were provided, each in charge of an employé who was competent to instruct the people in their use. In the district of Kernville alone there were fifteen such sub-stations. Large quantities were thus taken away by the people themselves and still larger quantities distributed in wagons in the course of inspections. Besides the disinfectants ordered by the Board immense quantities were contributed by various manufacturers of chemicals. The most noteworthy donation of this kind was sent by Quibell Brothers, of Newark, England, its value being stated at \$2,500.

A printed form for the daily report was prepared by the Secretary and furnished not only to the inspectors but to the hospitals, and to all practising physicians. In this way the Board was constantly in possession of perfectly accurate information as to the existence of contagious or infectious diseases, and was in position to promptly contradict the sensational stories of the newspapers which were calculated to excite so wide-spread a feeling of dread and distrust. To separate details of men were assigned the work of garbage collection and cremation, of disinfection of houses and cellars, of

disinfection of streets and open spaces and of the dump and river banks, of dragging out and burning dead animals, of erecting and caring for public privies, of collecting and destroying flood-polluted bedding, clothing and carpets. This latter was a troublesome task, because of the fact that in many cases these articles had been fished out of the flood with a view of saving them. Some idea of its magnitude may be formed when it is said that in one district alone, twelve wagon loads of such material were burned daily. To facilitate this process as well as the cremation of animals, rosin and tar were freely and successfully employed, large donations of these valuable articles having been received from generous citizens of Wilmington, N. C.

The entire force of the Sanitary Corps when it was doing its largest amount of work, including inspectors, clerks, messengers, laborers and cooks was two hundred and eighty five men. In consequence of the filthy habits of the great body of laborers, it was also found advisable to appoint an Inspector of Camps.

Blanks were also devised by Dr. Groff for making a Sanitary Survey, which gave the Board a knowledge of the condition, size, environment, occupancy, and health present and past of every house in the valley.

The Secretary advises a general distribution of these blanks to boards of health throughout the State as guides for this important work in their own communities.

In accordance with his expressed resolution, the Governor immediately after his departure commissioned Adj. General D. H. Hastings to take charge of the work of the renovation of Johnstown under the supervision of the Board. That officer reported to the Secretary for instructions on Thursday, June 11, with Col. H. T. Douglass, as Chief Engineer. Frequent inspections were made of the entire territory in company with these officers to determine in what manner the work could be most efficiently and economically prosecuted; the aim being kept constantly in view to authorize no measure which could not be justified on strictly sanitary grounds. The relations of the Secretary to these officers were of the most friendly nature, and he takes pleasure in acknowledging the uniform courtesy extended to him by them, and their readiness to comply with his every sug-

gestion. Although the forces now at work were smaller than those employed by the Pittsburgh Citizens' Relief Committee, the work was so much more thoroughly systematized that it was equally effective. Thoroughfares were rapidly opened up; dynamite was used with great effect in rending apart the solid drift at the stone bridge, and the sanitary corps was constantly on hand to keep down the stench from decomposing bodies which would otherwise have driven the laborers from their posts.

His Excellency, the Governor, from time to time visited Johnstown and inspected the progress of the operations. Excellent order was maintained by the presence of the 14th Regiment, P. N. G., Col. Perchment commanding, who performed this irksome and sometimes arduous duty with praiseworthy cheerfulness and marked discretion. In this connection it may be said that Johnstown and all who were working there owe a debt of gratitude to His Honor, Judge Johnson, for having assumed the responsibility of granting an injunction restraining the liquor saloons from opening for an entire month. The Secretary endeavored to obtain a renewal of this injunction and his Honor went so far as to intimate that if the consent of all the Councils of the different boroughs were given he would grant it. An effort was made to obtain this assent, but unsuccessfully.

On the eighth day of July a very considerable reduction of the force of laborers took place. General Hastings' duties in connection with the National Guard took him elsewhere; and Captain Geo. C. Hamilton, a member of his staff, assumed control as Chief Engineer in charge. Like his predecessor, his energies and skill were cheerfully and freely placed at the disposal of the Board, and his personal relations to the Secretary left nothing to be desired.

A State, which can, at a moment's notice place in the field such a body of citizen soldiery, officers and men, line and staff, of such varied acquirements, ready to meet emergencies of so unusual a nature, is certainly to be congratulated.

As soon as temporary houses began to be furnished by the Pittsburgh Citizens Relief Committee and by the Flood Relief Commission, the question arose "Where will it be safe from a sanitary stand point to place

dwellings?" At first it was deemed expedient to forbid the locating of a home in any region where there were still large deposits of flood filth and probably many human bodies. This placed almost the whole of Johnstown and a great part of Kernville under the ban. From week to week the limits were drawn in, but it was not until late in the month of August that the proscription was entirely removed. This, together with the fact that much uncertainty was felt as to the final adjustment of the grade of the city, and the dredging of the rivers, led observers who were not familiar with these circumstances to criticise somewhat unfavorably the apparent tardiness of the people in rebuilding.

On the tenth day of July a regular meeting of the Board was held at Johnstown, the work done under the auspices of the Board reviewed and the ground carefully inspected. As a result of this inspection a resolution was passed sanctioning all that had been done and authorizing the further prosecution of the work. Toward the end of the month, however, the Governor, finding that the money which he had assumed the heavy responsibility of borrowing was nearly exhausted, consulted the Secretary with regard to the propriety of bringing operations to a close. The result of the conference was the determination on the part of his Excellency to obtain an additional loan which would enable the work to go on for several weeks longer. A considerable portion of this labor consisted in the excavation of filthy cellars and clearing the river of wreckage which obstructed the escape of the sewage of the city. On the twenty-seventh of September, a special meeting of the Board was held at Johnstown at which it was decided that operations might safely cease on the part of the State; but as this action was received with deep regret by the people, it was decided, after consultation with the Governor, to allow the special work of promoting the escape of the sewage and drainage of the town, through the choked river, to continue a few days longer, and the declaration that the nuisance was abated was not issued until October 12th.

The essential service rendered by the corps of United States Engineers under Captains Bergland and Sayers, and subsequently Lieut. Mason H. Patrick, in first laying

pontoons and afterward building more substantial bridges across the rivers must not be forgotten. These means of communication were of the utmost importance as affording an opportunity for the removal of filth and wreckage. Other bridges were built by the State forces with the same object in view.

During the entire occupancy of the Board notwithstanding the unusual exposure to which children were subjected, not more than three cases of diphtheria occurred, (two of which originated before the flood), and there was no spread of the disease. In August, typhoid fever, introduced from the country, prevailed to a moderate extent, usually in a mild form. The Board has reason therefore to congratulate itself that its labors were not unfruitful.

In the meantime, the condition of the other flooded regions of the State was not overlooked.

By the 14th of June, reports had been received from all the inspectors to whom instructions had been wired on the 6th. Based upon these reports a declaration of nuisance was made for all the flooded towns on the Juniata, and the West Branch of the Susquehanna, and forwarded to the Governor. At the meeting of July 10th, a special committee was appointed to visit these places. This committee accomplished the work, and reported through its chairman, Dr. Groff. In accordance with its recommendations his Excellency the Governor furnished considerable pecuniary relief, and the Secretary forwarded disinfectants and circulars of information appropriate to the emergency to a large number of towns. The report of this committee is now awaited to declare the nuisance in these districts also abated.

The necessity of legal supervision of the water supplies of towns such as was proposed in a very mild way, by a bill introduced at the last session of the Legislature by the Board, has been clearly emphasized during the past year:

First, in the occurrence of an epidemic of Typhoid Fever in Wilkesbarre, during which there were about six hundred and fifty cases and sixty deaths; the cases occurring almost exclusively among those who used the water from one reservoir, while those who drank that supplied from other

sources generally escaped. A careful investigation of this epidemic and of the sources of water supply was made by Medical Inspector Taylor and subsequently by the Secretary, who visited the city for that purpose in the month of August.

Secondly, In the protest of a number of influential citizens of Muncy against the proposed introduction of water into that town from a source, which could not fail to be contaminated, an investigation of which was made by Dr. G. G. Groff, and

Thirdly, In a suit, in which the Secretary was a witness, between the Borough of Towanda and the Towanda Water Company. The water supply of this Company is from a source almost exactly like that now proposed for Muncy. The water has been from the first so foul and offensive that the citizens do not dare to drink it. It has been the subject of constant litigation and untold annoyance. The facts brought out in the recent trial at Tunkhannock throw valuable light on the way in which many of the towns in this State are supplied :—

A company is formed outside of the State generally in New England. Two or three citizens of the town are made corporators and their names put down on the books as holding one share of stock each. Water is brought from the nearest possible source, not the purest but that which will cost the company the least. The cheapest possible materials are used in the construction of the works, often materials which have been condemned elsewhere. A coarse strainer is substituted for a proper filter-bed, if indeed any attempt is made at filtration. But the owners of the works, hundreds of miles away, are not compelled to drink the water, and so long as they pocket their ten per cent dividends, what difference does it make to them that a little country town in the wilds of the Alleghanies is decimated by Typhoid Fever or Dysentery?

The Secretary also had occasion to make a personal investigation into an outbreak of Dysentery in the State Hospital for the Insane at Danville. Analysis of the water indicated that in some way, impurities had found their way into it, possibly from the canal under the bed of which the pipe ran. Dr. Schultz, (the Superintendent) had already improvised admirable appliances for boiling the water on a large scale, and the

good results of this precaution were almost immediately manifest.

During the past year the occurrence of infectious and contagious diseases in the following districts has been reported to the Board and successful action taken thereon to prevent their spread, viz :—

Typhoid fever at McAllisterville, S. O.		
	School,	Juniata Co.
"	"	Wilkesb're, Luzerne Co.
"	"	Eldred, McKean Co.
"	"	Middletown, Dauphin Co.
"	"	Duncannon, Perry Co.
"	"	Coalville, Cambria Co.
"	"	Nanticoke, Luzerne Co.
"	"	Trout Run, Lycoming Co.
"	"	Confluence, Somerset Co.
"	"	Dry Run, Franklin Co.
"	"	Instantan, Somerset Co.
"	"	Shanksville, Somerset.
"	"	Tyrone, Blair Co.
"	"	Weissport, Carbon Co.
"	"	Orbisonia, Huntingdon.
"	"	Butler, Butler Co.

Diphtheria at New Bethlehem, Clarion Co.

"	"	Antrim, Tioga Co.
"	"	in Lehigh Co., several villages.
"	"	at St. Petersburg, Clarion Co.
"	"	Gallitzin, Cambria Co.
"	"	(second outbreak) at Gallitzin.
		Cambria Co.
"	"	at Fleetville, Lackawanna Co.
"	"	Altoona, Blair Co.
"	"	Carbondale, Lackawanna Co.

Small-pox at Cameron Chute, Cameron Co.

"	"	"	Nanticoke, Luzerne Co.
"	"	"	Lebanon, Lebanon Co.
"	"	"	Kingston, Luzerne Co.
"	"	"	Wilkesbarre, Luzerne Co.
"	"	"	Pittsburgh, Allegheny Co.

Dysentery at Danville Hospital for the Insane, Montour Co.

Four epidemics of Diphtheria have called for the special intervention of the Board during the past year. One at Lehigh Co., involving a number of towns, two in Gallitzin, Cambria County, and one in Carbondale. In each case the Board felt called upon to declare the existence of an epidemic and to issue stringent regulations, especially prohibiting public funerals and unnecessary visiting in infected houses. Every case of Small-pox which has occurred has been promptly reported to the Board except in the instance of Nanticoke, where the borough

authorities were extremely negligent and allowed an epidemic of considerable proportions to take place. In all other cases, the disease has been checked at once.

An encouraging sign is the increasing readiness of authorities and people throughout the State to notify the Board of such outbreaks and obtain its advice as to their repression. This fact, however, only brings into clearer relief the absence of any proper sanitary organization recognized and enforced by the law which would enable them to meet such emergencies themselves.

The total number of written communications sent during the year was . . . 1910

The total number of written communications received during the year was . . . 1713

The total number of Health Circulars distributed by the Board during the year was . . . 12782

Of this number 3470 were distributed at Johnstown and the immediate neighborhood in connection with the flood of May 31st.

The total number of leaflets and bulletins issued in the flooded regions during the year was about . . . 25000

The total number of Annual Reports distributed by the Board for the same period was . . . 1251

And of Compendiums of the law relating to Public Health and Safety in Pennsylvania . . . 1082

Total number of pamphlets received during the year . . . 131

Total number of books received during the year was . . . 116

Total number of books obtained by requisition was . . . 9

Respectfully Submitted,

BENJAMIN LEE, M.D.,
Secretary and Executive Officer.

THE HEALTH OF BOTTLE-MAKERS.

—At the recent Sanitary Congress, in Worcester, England, Mr. G. W. Hastings, M. P., said that one of the greatest recent advances in industrial hygiene is the new machine for bottle-making. Under the old plan of making bottles by blowing, the lungs of the workmen had been so much affected that their lives extended to not much more than thirty years in duration. With the new machine all blowing was done away with, and,

there is now no reason why the longevity of bottle-workers should not equal that of other artisans.

EATING BEFORE SLEEPING.—A recent writer says that the view that brain workers should go supperless to bed is not good advice. Most medical authorities of the day think it wrong. It is a fruitful source of insomnia and nervous exhaustion. The brain becomes exhausted by its evening work, and demands rest and refreshment of its wasted tissues, not by indigestible salads and "fried abominations," but by some nutritious, easily digested and assimilated articles. A bowl of stale bread and milk, of rice, or some other farinaceous food, with milk or hot soup, would be more to the purpose. Any of these would insure a sound night's sleep, from which the man would awaken refreshed.

CHOOSE A WHOLESOME HOME.—"A Boston tenant has sued his landlord and has recovered some \$5,000 damages because of defective drainage in the house he occupied, whereby the plaintiff's family were made ill with diphtheria. This is an encouraging sign. We would like to make record of a few more such cases. Tenants have rights as well as landlords, and although the responsibility of a landlord in a matter like this may be hard to fix, the result of this Boston trial is satisfactory. All the same, the wisest course for a tenant to pursue is to see that the house he is about to rent is in good order so far as plumbing and sanitary arrangements are concerned. It is not prudent to run risks, even if there is a chance of holding the owner responsible for doctor's bills and like expenses."

